East Kent has been a gateway for new people, cultures, ideas and trade for thousands of years. The Isle of Thanet, now joined to the mainland following the silting and reclamation of the former Wantsum Channel, was at the forefront of these movements.

A Kent County Council programme to build a new road link, the East Kent Access, in the south-east part of Thanet resulted in the largest archaeological project carried out in Britain in 2010. An Oxford Wessex Archaeology joint venture undertook the excavation of 48 hectares along the 6.5 kilometre route, revealing a wealth of archaeological evidence spanning the Palaeolithic to Second World War.

Volume 1 describes the archaeological remains and discusses their wider significance in Thanet and beyond. Of note are two groups of Early Neolithic pits, 11 Bronze Age ring-ditches, Late Bronze Age settlement and two metalwork hoards. Amongst the extensive Iron Age remains is a unique trapezoidal enclosure and associated sunken-featured building. However, potentially the most important discovery is a large enclosure on the Ebbsfleet Peninsula which, it is argued, may have been associated with Julius Caesar's invasions of 55–54 BC. Rural Roman settlement was extensive and included one site with roundhouses showing continuity from the Late Iron Age and another with sunken-featured buildings of 3rd–4th-century date, along with at least three mixed rite cemeteries. Anglo-Saxon settlement and several cemeteries originated in the mid-6th century, but of particular interest is an 8th-century settlement and cemetery with associated evidence for shellfish processing. Medieval remains were comparatively sparse but, as with the earlier periods, their distribution reflects the changing use of different landscape units represented by the chalk ridge, the southern slopes of Thanet and the Ebbsfleet Peninsula.

Volume 2 presents the analysis of the finds, environmental remains and results of the extensive radiocarbon dating programme.

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Digging at the Gateway – The Archaeology of East Kent Access (Phase II) Volume 1

Digging at the Gateway

Archaeological landscapes of south Thanet

The Archaeology of East Kent Access (Phase II)
Volume 1: The Sites

By Phil Andrews, Paul Booth,
A P Fitzpatrick and Ken Welsh

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With contributions by Alistair J Barclay, Hugh Beamish, Kate Brady, Nicholas Cooke, John Cotter, J Crowther, Denise Druce, Kirsten Egging Dinwiddy, Oliver Good, Phil Harding, David Holman, Kath Hunter, Matt Leivers, Jacqueline I McKinley, Richard I Macphail, Sue Nelson, Rebecca Nicholson, Cynthia Poole, John Powell, Ian Scott, Rachael Seager Smith, Ruth Shaffrey, Elizabeth Stafford, Chris J Stevens, Lena Strid and Gerry Thacker

Illustrations by Hannah Kennedy, Markus Dylewski, Julia Collins, S E James and Sophie Lamb

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Front cover: Aerial photograph showing Cliffs End Spur in foreground (Zones 13–15) and Chalk Ridge in background (Zones 17–20), with Manston airport in upper right hand corner (view from east)

Back cover: Early Bronze Age barrow 2 in Zone 13 during course of excavation (view from south-east)

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Acknowledgements

It is important to emphasise at the beginning that the successful conclusion to the major programme of fieldwork, undertaken over a remarkably short period of time, was only achieved through continuous co-operation between the principal parties involved: Oxford Wessex Archaeology, Volkerfitzpatrick Hochtief, Kent County Council, Atkins and Jacobs. All members of the construction and archaeological teams were fully aware of each other's needs, recognised the importance of the archaeology and worked hard to ensure the archaeological works were fully accommodated. Without such teamwork the archaeological investigations and road construction works could not have advanced alongside each other as they did, often with only hours or a few metres between them, at multiple locations along the route.

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Foreword

In 2009 prospective road builders gathered at County Hall in Maidstone to be introduced to the East Kent Access Phase 2 Road. I think they were surprised to hear the words of John Farmer, Kent County Council's Major Projects Manager, *'Do not think of this as building a road, think of it as two rail crossings and an archaeological excavation.'* In building a relatively modest but very important stretch of new dual carriageway these were the main challenges to be faced.

It is not unusual for substantial archaeological investigation to accompany the construction of a new road but this was different. Rather than a strung out series of archaeological hot-spots the entire route of the East Kent Access Phase 2 road was known to lie on areas of complex and important, sometimes nationally important, archaeology. Coupled with a timetable constrained by the programme for railway closure to enable one of the largest pre-constructed boxes ever to be built to be thrust beneath to create a tunnel, the challenge to excavate ahead of the road builders was immense and required new approaches and technologies to achieve it.

The scale of the archaeological challenges associated with building this road was recognised at least as far back as my first involvement in 1998. Thanet is well known for possessing beneath its extensive arable lands one of the richest buried archaeological landscapes in the country. The former island's location at the north-eastern tip of Kent made it a gateway for new peoples, ideas, trade and invasion from ancient times. The peoples who once inhabited the area would have borne witness to some of the earliest and most significant events in early British history. The Romans, first through Caesar and then during the Claudian invasion landed on this coastline, and field armies departed in the late Roman period; nearby Richborough was one of the last areas of Roman administration before the abandonment of the province. The Anglo-Saxon people's arrival is celebrated through the tradition of the landing of Hengist and Horsa in AD 449, and later the arrival in AD 597 of Pope Gregory's Mission led by the Benedictine Monk Augustine to convert the Anglo-Saxons to Christianity is considered to have taken place here, close to the route of the new road.

Early desk-based studies undertaken as proposals for the road scheme developed identified a wealth of archaeological remains, some of very high significance, lying throughout the various route corridors being considered. Given the density of archaeology known to occur in the landscape, slight modification of routes to avoid archaeology was difficult, particularly as the location of rail crossings and connections with the road network at Minster, Sandwich and Lord of the Manor were fixed. Furthermore given the shallow depth at which archaeology was expected to lie, options for burying the archaeology beneath the road were also very limited. Given the unavoidable impact on buried archaeology, the decision was therefore taken that large-scale archaeological excavation would take place before the road was constructed. With the certainty of the approach and an understanding that archaeological impact would occur regardless, it was decided that what would have been an expensive programme of trial trenching was unnecessary. The approach of arranging for strip, map and sample excavations and avoiding trial trenching has been a long standing approach in Kent that was used as far back as the 1990s on the development of the nearby Thanet Way road between Monkton and Minster. Save one area where the road rises to cross the railway at Cottington, the entire footprint of the East Kent Access Phase 2 road, more than 40 hectares, was stripped of its ploughsoil and subsoil to reveal the buried archaeological landscape.

To enable the risk of archaeological discoveries to be properly assessed and the excavation programme designed and resourced, a unique archaeological model was put together using available archaeological, documentary and geographical information. The model predicted in detail what archaeology could be anticipated and its quantities. This provided a useful baseline for programming and resourcing the project and management of the contract, and in broad terms proved to be relatively close to the eventual findings.

To meet the enormous challenge of keeping the archaeology programme ahead of the ambitious construction programme required very close working between archaeologists, the road builders and their contractors, the client, Kent County Council, and the project engineers and managers. Recognising the scale of the works the principal contractor VolkerFitzpatrick Hochtief JV appointed Oxford Wessex Archaeology (OWA), a joint venture of two of the largest archaeological units in the country, to carry out the archaeological programme, and at times up to 150 archaeologists were deployed on to the site. Atkins were appointed as archaeological consultants to co-ordinate the complex programme. For their part, Kent County Council recognised the need for full-time monitoring and guidance of the archaeological works and made

provision for my own secondment to the on-site team. I was helped throughout by the Council's project managers Jacobs. The success of the project was in no small part due to the cooperation and positive attitude and assistance of all those involved and, although challenging, was an enjoyable and satisfying experience and I feel privileged to have been part of that team.

The approach on site demanded innovative thinking, processes and technologies. Most important of all was that decisions on how to apply the excavation and sampling strategies had to be made very quickly, based on understanding exactly what had been found. Oxford Wessex Archaeology used their experience gained on major sites such as Terminal 5 Heathrow to good effect. As sites were stripped of topsoil they were mapped and plans produced for review by myself and the archaeologists normally within 24 hours. Excavation records, finds and environmental samples were rapidly processed at the site compound and information fed in to a Geographic Information System. Up to date information was then passed back to the site and management teams so that informed decisions could be undertaken as quickly as possible and any delay avoided. Without such a system in place I am convinced that it would have been virtually impossible to excavate so rapidly, understand exactly what we had found and adjust our strategies in the time available. It also allowed us to look not only at sites in detail but how they all linked together and into the landscape.

As you will read in these volumes, the archaeology discovered on the road scheme lived up to our greatest expectations. Spread across the south Thanet coastal landscape we found remains of many periods much of which is of regional and national significance, in some cases unique and others that are characteristically distinct in Thanet. Together the discoveries have provided an enormous contribution to our understanding of the important archaeological landscapes of Thanet and made major contributions to research agendas at regional and national levels.

A major aspect of the project was the extensive Community Archaeology programme that was carried out by OWA. Too often in recent years major archaeological discoveries have been made with little opportunity for local communities to see them or be involved. From the outset the County Council were determined to ensure that the Thanet communities had the opportunity to engage with the exciting discoveries that we expected to make. As a result an exciting and wide-ranging programme of exhibitions, roadshows, school visits, talks and open days, as well as a dedicated area set aside for volunteer excavation and finds processing, was devised by the OWA Community Archaeologist and achieved great successes. The figures are impressive, more than 100 volunteers helped on the project, 3500 pupils in 21 schools received visits by the Community Archaeologist, 1500 attended the open days and many thousands saw the exhibitions and roadshows. I hope that what we achieved goes a long way to demonstrate that the challenge of integrating Community Archaeology into even the most complex of construction projects is surmountable and encourages others to follow our example in future.

I feel privileged to have been part of the team that carried out the largest excavation in Britain in 2010. It was truly a team effort by everyone involved – the client, road builders and engineers, archaeologists and the volunteers. To successfully excavate such a wealth of archaeology within the ambitious timescales needed and despite at times atrocious weather conditions was a truly remarkable achievement which we can all feel rightly proud of. Congratulations to everyone involved.

Simon Mason
Principal Archaeological Officer
Kent County Council

Summary

Oxford Wessex Archaeology (OWA) Joint Venture undertook archaeological investigations in advance of construction of the East Kent Access Road (Phase II) (hereafter EKA2), largely between November 2009 and September 2010. The initial two-month period was mostly taken up with preliminary surveys comprising fieldwalking, test pitting and metal detecting, and limited evaluation trenching. Several small-scale excavations were carried out following the main phase of investigations, and all fieldwork was completed by the end of May 2011.

The new road, approximately 6.5km in length, has been built on the southern slopes of Thanet, extending northwards from the Ebbsfleet peninsula at the mouth of the former Wantsum Channel in the south ('Landscape 3'), then eastwards across the Cliffs End spur ('Landscape 2'), and finally up the scarp slope to the Chalk ridge occupied by Manston Airport to the north ('Landscape 1'). A rich archaeological landscape extends across this variable topography, and at the planning stage it was recognised that the road could not be constructed without affecting known or predicted important archaeological remains, and that these were likely to occur over much of the route. Therefore, the decision was taken to excavate almost the entirety of the footprint for the new road, an area of approximately 48 hectares, thereby providing a substantial and unique transect across this part of Thanet – effectively an island from perhaps the Early Bronze Age to the 15th century AD, with inundation of the Wantsum Channel well advanced by the Late Mesolithic.

This approach has allowed a far better understanding of the sequence and nature of settlement to be gained than would have been possible through a series of individual, smaller excavations. As part of this approach it was decided that extensive evaluation would not be cost-effective, as it would only confirm what was already known about the archaeology and the construction impact. Instead, and using the large amount of information available from previous investigations in the vicinity, an innovative approach was adopted that involved the creation of an 'Archaeological Model' that predicted the archaeological remains which were likely to be encountered along the route. For convenience, the route was divided into 29 archaeological 'zones' reflecting changes in topography, differences in archaeological potential and elements of the road construction scheme.

The scale of the project was enormous, particularly given the nine-month 'window' for virtually all of the excavations to be undertaken, beginning in exceptionally poor winter conditions. A team size often in excess of 100 made discoveries which covered virtually every period between the Palaeolithic and World War II, generating almost 30,000 context records, a vast quantity of finds and large numbers of soil samples. For most of the nine months, excavation proceeded immediately in advance of, and sometimes alongside, construction works. To achieve this required an exceptional level of planning, integration and understanding between all parties involved to ensure there were no delays to the project. Innovative approaches to fieldwork were employed involving initial strip, map and sample of zones followed by appropriate detailed excavation, informed by a bespoke on-site GIS linked to data generated from the finds and environmental processing which continued in tandem with the excavation. It can be noted here that the archaeological fieldwork and construction programme were completed on schedule, confirming the success of the approach adopted.

With the exception of a single flint flake of probable Palaeolithic date and one further Late Upper Palaeolithic/Early Mesolithic piece, the earliest discoveries were a Mesolithic tranchet axe (and a flake from a second example) and a small number of microliths and other diagnostic pieces of similar date, all occurring residually in later features.

Two small groups of pits with associated assemblages of pottery and worked flint dated from the Early Neolithic, representing rare occurrences and forming part of the landscape that included the Chalk Hill causewayed enclosure investigated earlier. The only Middle Neolithic features were a burial and a single pit. Late Neolithic material was also generally sparse, though a possible Late Neolithic hengiform monument has been identified, remodelled in the Early Bronze Age to create an unusually large ring-ditch.

Over the entire route, 11 ring-ditches were certainly identified, along with another possible example. Thanet is rich in ring-ditches and it is unsurprising that up to 12 of these were found on the scheme. However, they provided an opportunity to look at examples spread across the landscape, examine their construction sequences and investigate associated burials. Most of the ring-ditches are of Early Bronze Age date and were generally located on high ground overlooking the Wantsum Channel or Pegwell Bay. They varied greatly in diameter from the smallest, a Middle Bronze Age example at around 7m in diameter, to the largest at

approximately 45m across, this perhaps with a Late Neolithic origin. Burials were found associated with a number of these monuments and one in particular contained a rich assemblage which included a unique triple Food Vessel and an amber 'button'. The chronology of the burials of all periods has been clarified through a comprehensive programme of radiocarbon dating.

No Early Bronze Age settlement or agricultural features were identified and there was only limited evidence for Middle Bronze Age field systems. Later Bronze Age activity was mainly focused on the Ebbsfleet peninsula and on the adjacent slopes of Cottington Hill, with a further focus close to Cliffs End. The remains of at least three settlements including post-built structures, enclosures and trackways were identified, along with a number of burials. Two gold bracelets and a group of bronze ingot and other fragments are very likely to relate to several Late Bronze Age metalwork hoards that have been found previously at the neck of the Ebbsfleet peninsula.

The Iron Age was the most extensively represented period on the scheme, and the vestiges of settlement, enclosures, field systems and trackways were widespread throughout the landscape. The most significant site, principally of Early–Middle Iron Age date, lay on a promontory overlooking Pegwell Bay at Cliffs End, where a large trapezoidal enclosure with broad, deep ditches overlay an earlier ring-ditch. Within the enclosure was a sunken-featured building (a type of prehistoric structure that appears unique to Thanet) and other features, whilst in the immediately surrounding area were post-built structures, probable grain storage pits, complexes of quarries and numerous other pits, several containing burials (including that of a horse) and all used ultimately for the disposal of large quantities of domestic rubbish.

Several Roman trackways were recorded, some originating in the Iron Age, and these have provided an opportunity to map the ancient routeways of this part of Thanet. Adjacent to the trackways were enclosures of various forms, field systems, cemeteries and several areas of settlement, most of which had their roots in the Iron Age.

The largest and longest-lived of these settlements lay at the neck of the Ebbsfleet peninsula, within sight of Richborough, and had a remarkable sequence that spanned the Late Bronze Age to the late Roman period. This area was at the forefront of the major historical events of invasion and the settlement, besides trackways, enclosures, numerous pits, wells and burials, also included a relatively large number of roundhouses rarely found in Thanet and, later, several sunken-featured buildings. At some time probably around the middle of the 1st century BC a substantial ditch had been dug to enclose this strategically important area, and there is a possibility that this work may have been associated with Caesar's expeditions, with a later phase of ditch conceivably associated with the Claudian invasion a century later.

Another focus of Roman settlement, with a concentration of evidence in the middle Roman period, was located on the Chalk ridge and was distinguished by consisting almost entirely of sunken-featured structures. Several small Roman cemeteries were also located in this area, with another example further south, some including both cremation and inhumation burials.

Two areas of early–mid-Saxon settlement were identified, with a possible chronological overlap perhaps providing rare evidence for settlement shift at the end of the 7th century, enhanced by the presence of probably contemporary cemeteries. A dispersed group of sunken-featured buildings of probable 7th-century date lay on the lower slopes of Cottington Hill, with parts of one or more cemeteries close to a complex of trackways higher up along the Chalk ridge. A range of grave goods indicates that the use of these cemeteries probably spanned the mid-6th to the early 8th century. A concentration of pits on the high ground to the north of Cliffs End is broadly of 8th-century date, the remains of buildings, perhaps of posthole or beamslot construction, not surviving. However, there was important evidence for large-scale shellfish processing, possibly with a link to the religious foundation at Minster, and associated with the settlement was a small cemetery. Similar processing remains had previously been found nearby at Cliffs End Farm, providing further confirmation of the scale of this activity.

An apparently isolated group of pits has been assigned a late Saxon date, and medieval settlement appears to have been confined to the Ebbsfleet peninsula. Here, two or possibly three farmsteads were established, their main phase of development spanning the 11th to 14th centuries, broadly contemporary with land reclamation within the rapidly silting Wantsum Channel, which by the end of this period is likely to have largely comprised salt marsh. Reclamation was undertaken by the monks of St Augustine's Abbey, Canterbury, who built the nearby earthen banks which survive as the Monks Wall, Abbotts Wall and the Boarded Groin, but medieval settlements in Thanet were generally small and dispersed.

Post-medieval and modern remains were very sparse; the former represented by a few field boundaries, whilst the latter mainly comprised a network of World War II trenches around the southern perimeter of Manston airfield, an important front-line fighter base in World War II.

A large number and wide range of artefacts were recovered from the excavations and include several groups of importance as well as individually significant finds. Worked flint was ubiquitous, but there were notable Early Neolithic and Early Bronze Age concentrations indicative of in situ knapping, utilising different sources of raw material. The Iron Age potins have added considerably to previous coin finds from the area, whilst Iron Age and Roman metalwork assemblages provide large groups from these periods. Of some importance is the additional Late Bronze Age hoard material from the Ebbsfleet peninsula, including a rare pair of gold bracelets. The Anglo-Saxon grave goods, largely metalwork, also contribute further to the nationally important cemetery groups from East Kent. The prehis-

toric pottery assemblages include a unique Early Bronze Age triple Food Vessel and valuable groups of Early–Middle Iron Age ceramics. The Roman pottery is notable for the individual grave groups and also the use of birch bark tar for repair, a practice recorded elsewhere in Kent. The Anglo-Saxon grave groups include further examples of Merovingian bottles whilst the domestic assemblage is marked out by the presence of Ipswich ware, the largest assemblage from any site in Kent. The medieval pottery, in contrast, is relatively modest in terms of interest. Triangular fired clay 'bricks', other kiln furniture and briquetage provide detailed information on small-scale salt production, particularly in the Iron Age, whilst the worked stone includes querns of various periods, with evidence for prehistoric exploitation of the Folkestone Beds.

The value of the environmental assemblages lies mainly in them being amongst the first large groups, of various periods, to be studied from Thanet. Of note amongst the animal bone is the presence of fowl in Middle Iron Age contexts, donkey which is likely to be of pre-Roman date and fallow deer which is certainly Roman and not later. Changing proportions of cattle and sheep/goat in the Roman period are likely to reflect changing urban and military needs. Charred plant remains are largely as anticipated, but radiocarbon dating confirmed flax in the Early Neolithic and the continued presence of naked barley up to the Late Bronze Age. The Anglo-Saxon shellfish assemblage is particularly large, includes a range of species, and is interpreted as evidence for processing on a significant scale for subsequent trade. It shows the exploitation of local sources, though there is no evidence for the cultivation of oysters at this time.

Finally, the human bone from the prehistoric, Roman and Anglo-Saxon periods represents the largest group of skeletal material to be studied and published from Thanet and will provide a valuable source for future research. The extensive radiocarbon dating programme, largely targeted on the human bone, and isotope analysis of a group of Middle Iron Age burials (indicating a surprising degree of mobility), contribute further to the value of this assemblage.

An important and particularly successful part of the archaeological programme was community involvement, which was fully integrated within the project. An extensive outreach programme was put in place to enable the local community along the route to actively engage in and feel part of the ongoing archaeological investigations. A community excavation on one of the Bronze Age ring-ditches offered practical experience and there were volunteering opportunities in finds and environmental processing. Road shows, numerous school and other visits, talks and open days took activities and news of the latest discoveries to a wider audience on Thanet and beyond, and a dedicated website was set up. Overall, several thousand people came into direct contact with the project in various ways, and many thousands more followed its progress and discoveries.

Résumé

L'aventure conjointe d'Oxford et de Wessex Archéologie (OWA) a entrepris des investigations archéologiques préalablement à la construction de la Voie d'Accès de l'Est du Kent (Phase II) (ci après EKA2), essentiellement entre novembre 2009 et septembre 2010. La période initiale de deux mois fut surtout consacrée à des diagnostics préliminaires comprenant arpentages, puits tests, détection de métaux et des tranchées d'évaluation limitées. Plusieurs excavations de petite échelle furent effectuées suite à la première phase d'investigations, et d'ici la fin mai 2011 tous les travaux de terrain étaient terminés.

La nouvelle voie, qui mesure environ 6,5 km de longueur fut construite sur les pentes sud de Thanet, s'étendant au nord de la péninsule d'Ebbsfleet à l'embouchure de l'ancien chenal de Wantsum au sud ('Paysage 3'), puis vers l'est traversant l'éperon de Cliffs End ('paysage 2'), pour finalement remonter la pente escarpée jusqu'à la crête de Chalk occupée par l'aéroport de Manston au nord ('Paysage 1'). Un riche paysage archéologique s'étale à travers cette topographie variée, et au stade de la planification, il s'est avéré que la construction de la route ne pourrait se faire sans affecter d'importants vestiges archéologiques connus ou présumés, et que ceux-ci risquaient de se répartir sur une grande partie du tracé de la route. La décision fut donc prise d'excaver presque la totalité de l'emprise de la future voie, une aire d'environ 48 hectares qui nous offrait ainsi une section transversale substantielle et unique à travers cette partie de Thanet – qui fut en fait une île depuis peut-être l'âge du bronze ancien jusqu'au XVe siècle ap J.-C., l'inondation du chenal de Wantsum étant bien avancée au mésolithique tardif.

Cette approche nous a permis de bien mieux comprendre la séquence et la nature du campement que cela n'aurait été possible avec une série d'excavations individuelles, plus petites. Dans le cadre de cette approche, il fut décidé qu'une évaluation approfondie ne serait pas d'un bon rapport coût/résultat car elle ne ferait que confirmer ce que nous savions déjà sur l'archéologie et l'impact de la construction. A la place, et en utilisant la vaste quantité de renseignements résultant de précédentes investigations dans les environs, une approche innovante fut adoptée qui comprenait la'création d'un 'Modèle Archéologique' pour prédire les vestiges archéologiques que nous étions susceptibles de rencontrer le long de la voie. Pour des raisons pratiques, la voie fut divisée en 29 'zones' archéologiques reflétant les changements topographiques, les différences dans le potentiel archéologique et les éléments du projet de construction de la route.

L'échelle du projet était énorme, surtout compte tenu de la 'fenêtre' de neuf mois pour mener à bien quasiment toutes les excavations, en commençant dans des conditions hivernales exceptionnellement difficiles. Une équipe dont la taille dépassait souvent 100 personnes, a fait des découvertes qui couvraient quasiment toutes les périodes du paléolithique à la deuxième guerre mondiale, générant presque 30 000 enregistrements de contextes, une vaste quantité de trouvailles et de très nombreux échantillons de sol. Pendant la plus grande partie des neuf mois, les fouilles se déroulèrent juste en avant, et quelquefois à côté, des travaux de construction. Pour y parvenir cela exigea un degré exceptionnel de planification, d'intégration et de compréhension entre toutes les parties impliquées afin de garantir que le projet ne subirait pas de retard. Des approches innovantes de l'arpentage furent employées, elles impliquaient d'abord décapage, répertoriage et échantillonage de certaines zones, suivis d'une fouille détaillée appropriée, alimentée par un SIG spécifique, présent sur le site, relié à des données générées à partir de trouvailles et de l'analyse environnementale qui continuait en tandem avec les fouilles. Il faut noter ici que les travaux archéologiques de terrain et le programme de construction furent terminés à la date prévue, ce qui confirme le succès de l'approche adoptée.

A l'exception d'un seul éclat de silex datant probablement du paléolithique et d'une autre pièce de la fin du paléolithique supérieur/mésolithique ancien, les découvertes les plus anciennes étaient une hache tranchet mésolithique (et un éclat d'un second exemplaire) et un petit nombre de microlithes et autres pièces de diagnostic de datation similaire, toutes réapparaissant sous forme de résidus dans des vestiges plus tardifs.

Deux petits groupes de fosses et les assemblages de céramique et de silex travaillé associés dataient du néolithique ancien, ils représentaient de rares présences et faisaient partie du paysage qui comprenait l'enceinte à allée empierrée de Chalk Hill examinée antérieurement. Les seuls éléments du néolithique moyen étaient une sépulture et une seule fosse. Le matériel du néolithique tardif était également en général peu abondant, bien qu'un éventuel monument de type enceinte du néolithique final ait été identifié, remodelé au début de l'âge du bronze pour créer un fossé circulaire d'une grandeur inhabituelle.

Sur la totalité de l'emprise de la voie, 11 fossés circulaires furent identifiés avec certitude, avec la possibilité d'un autre en plus. Thanet est riche en fossés circulaires et il n'est pas surprenant qu'on en ait découvert jusqu'à douze au cours de ce projet. En tout cas, ils nous offrirent l'opportunité d'en observer des exemples répartis sur tout le paysage, d'examiner leur séquence de construction et d'étudier les sépultures associées. La plupart des fossés circulaires datent de l'âge du bronze ancien et se trouvaient en général sur les hauteurs dominant le chenal de Wantsum ou la baie de Pegwell. Ils variaient énormément en diamètre, du plus petit, un exemple de l'âge du bronze moyen d'environ 7 mètres de diamètre, au plus grand d'approximativement 45 mètres en travers, celui-ci peut-être d'origine néolithique final. On trouva des sépultures associées à nombre de ces monuments et une en particulier contenait un riche assemblage qui comprenait un triple récipient à nourriture unique en son genre et un 'bouton' d'ambre. La chronologie des sépultures de toutes les périodes a été clarifiée par un programme exhaustif de datations au radiocarbone.

Nous n'avons identifié aucun trait de campement, ni d'agriculture de l'âge du bronze ancien, et il n'y avait que peu de témoignages de systèmes de champs de l'âge du bronze moyen. L'industrie de l'âge du bronze tardif se concentrait essentiellement sur la péninsule d'Ebbsfleet et sur les pentes adjacentes de Cottington Hill, avec un foyer supplémentaire près de Cliffs End. Les restes d'au moins trois campements comprenant des structures à ossature de poteaux, des enclos et des chemins furent identifiés, ainsi qu'un nombre de sépultures. Deux bracelets en or et un groupe de lingots de bronze et d' autres fragments ont très probablement des liens avec plusieurs trésors de métallurgie de l'âge du bronze tardif qui ont été trouvés dans le passé dans l'isthme de la péninsule d'Ebbsfleet.

L'âge du fer était la période la mieux représentée du projet, et les vestiges de campements, d'enclos, de systèmes de champs et de chemins se répartissaient partout dans le paysage. Le site le plus significatif, principalement daté de l'âge du fer ancien/moyen, se situe sur un promontoire dominant Pegwell Bay à Cliffs End, là un grand enclos trapézoïdal avec des fossés larges et profonds se superpose à un fossé circulaire antérieur. A l'intérieur de l'enclos se trouvait un bâtiment à fondations enterrées (un type de structure préhistorique qui semble propre à Thanet) et d'autres vestiges tandis que dans les environs immédiats se trouvaient des structures à ossature de poteaux, de probables fosses à grain, des complexes de carrières et de nombreuses autres fosses, plusieurs contenant des inhumations (y compris celle d'un cheval) et toutes furent finalement utilisées pour le dépôt d'importantes quantités de déchets ménagers.

Plusieurs chemins romains furent enregistrés, certains dont l'origine remontait à l'âge du fer, et ceux-ci nous offrirent l'opportunité de cartographier les anciennes voies de cette partie de Thanet. Adjacents à ces chemins se trouvaient des enclos de formes diverses, des systèmes de champs, des cimetières et plusieurs zones de campements dont la plupart avaient leurs racines à l'âge du fer.

Le plus grand et le plus durable de ces campements se trouvait dans l'isthme de la péninsule d'Ebbsfleet, à proximité de Richborough, et avait une remarquable séquence qui s'étalait de l'âge du bronze final à la fin de la période romaine. Cette zone se trouvait à l'avant-garde d'événements historiques majeurs d'invasion et d'occupation, en plus des chemins, enclos, nombreuses fosses, puits et inhumations, elle comprenait également un nombre relativement important de maisons rondes rarement trouvées à Thanet, et, plus tard, plusieurs bâtiments à fondations enfoncées. A un moment, probablement vers le milieu du Ier siècle av.J.-C., on avait creusé un fossé substantiel afin d'enclore cette zone d'importance stratégique, et il se peut que ces travaux aient été associés à des expéditions de César, avec une phase plus tardive du fossé peut-être associée à l'invasion de Claudius, un siècle plus tard.

Un autre foyer de campement romain, dont les témoignages se concentrent sur le milieu de la période romaine se trouvait sur la crête de Chalk Ridge et était remarquable du fait qu'il consistait presqu'uniquement en structures à fondations enterrées. Plusieurs petits cimetières romains se trouvaient également dans cette zone, avec un autre exemple plus au sud, certains comprenaient à la fois des incinérations et des inhumations.

Deux zones d'occupation du début/milieu de la période saxonne furent identifiées avec peut-être un chevauchement chronologique qui nous fournit un rare témoignage de déplacement d'occupation à la fin du VIIe siècle, ce que vient renforcer la présence de cimetières probablement contemporains. Un groupe éparpillé de bâtiments à fondations enfoncées probablement du VIIe siècle s'étalait sur les pentes inférieures de Cottington Hill, avec des parties d'un ou plusieurs cimetières proches d'un complexe de chemins plus haut le long de la crête de Chalk Ridge. Une gamme de mobilier funéraire indique que la période pendant laquelle ces cimetières furent en usage s'étendit probablement du milieu du VIe au début du VIIIe siècle. Une concentration de fosses sur les hauteurs au nord de Cliffs End date en gros du VIIIe siècle, les vestiges de bâtiments de construction peut-être à trous de poteaux ou à emboitement de poutre n'ont pas survécu. Cependant il y avait d'importants témoignages d'une industrie du coquillage à grande échelle, peut-être en lien avec la fondation religieuse de Minster et, associé à l'occupation, se trouvait un petit cimetière. Des vestiges similaires de transformation avaient antérieurement été trouvés près de Cliffs End Farm, apportant une nouvelle confirmation de l'échelle de cette activité.

On a attribué à la fin de la période saxonne un groupe apparemment isolé de fosses, et le campement médiéval semble avoir été confiné à la péninsule d'Ebbsfleet. Ici, deux ou peut-être trois bâtiments de ferme furent établis, leur principale phase de développement s'étalant du XIe au XIVe siècles, elle est en gros contemporaine de l'assèchement des terres à l'intérieur du Chenal de Wantsum qui s'enlisait rapidement, et qui, au moment où cette période prend fin, consistait probablement

surtout en marais salants. L'assèchement fut entrepris par les moines de l'abbaye de St Augustin, Canterbury, qui construisirent les talus de terre avoisinants qui ont survécu sous le nom de Monks Wall, Abbots Wall et Boarded Groin, mais les campements médiévaux de Thanet étaient généralement petits et dispersés.

Les vestiges post-médiévaux et modernes étaient très peu abondants; le premier représenté par quelques limites de champs, tandis que le second comprenait essentiellement un réseau de tranchées de la deuxième guerre mondiale autour du périmètre sud du terrain d'aviation de Manston, une importante base aérienne du front de la deuxième guerre mondiale.

Un grand nombre et une gamme étendue d'artefacts furent révélés par les fouilles et comprennent plusieurs groupes conséquents ainsi que des trouvailles individuelles significatives. Le silex travaillé était présent partout, mais il y avait des concentrations remarquables du néolithique ancien et du début de l'âge du bronze, témoignages de taille in situ, et d'utilisation de diverses sources de matière première. Les potins de l'âge du fer ont été un ajout considérable aux précédentes trouvailles de monnaie dans la région tandis que des assemblages de métallurgie de l'âge du fer et de la période romaine nous fournissent de grands groupes de ces périodes. D'une certaine importance est le matériel supplémentaire d'un trésor de l'âge du bronze final provenant de la péninsule d'Ebbsfleet, il comprend une rare paire de bracelets en or. Le mobilier des tombes anglo-saxonnes, essentiellement de la métallurgie, a aussi fait avancernotre connaissance des groupes de cimetières d'importance nationale de l'est du Kent. Les assemblages de poterie préhistorique comprennent une pièce unique, un triple récipient à nourriture du début de l'âge du bronze et des groupes précieux de céramiques du début/milieu de l'âge du fer. La poterie romaine est remarquable pour ses groupes de tombes individuelles et aussi son utilisation du goudron d'écorce de bouleau pour les réparations, une pratique rencontrée ailleurs dans le Kent. Les groupes de tombes anglo-saxonnes comprennent plus d'exemples de bouteilles mérovingiennes tandis que l'assemblage domestique se distingue par la présence de vaisselle d'Ipswich, le plus important assemblage de tous les sites du Kent. La poterie médiévale, par contraste, ne présente qu'un modeste intérêt. Des 'briques' d'argile cuite triangulaires, d'autre mobilier de four et du briquetage nous apportent des renseignements détaillés sur une production de sel à petite échelle, en particulier à l'âge du fer, tandis que la pierre travaillée comprend des meules de diverses périodes avec des témoignages d'exploitation des Folkestone Beds à la préhistoire.

La valeur des assemblages environnementaux réside surtout dans le fait qu'ils sont parmi les premiers grands groupes de diverses périodes de Thanet à être étudiés. On notera parmi les ossements d'animaux la présence de volatiles dans des contextes de l'âge du fer moyen, d'un âne qui date probablement de la période préromaine et d'un daim, qui est certainement romain et pas plus tardif. Le changement dans les proportions bovins/ovins et caprins à la période romaine reflète probablement le changement dans les besoins urbains et militaires. Comme prévu, mais cela a été confirmé par des datations au radiocarbone, les vestiges calcinés de plantes sont du chanvre au néolithique ancien et une présence continue d'orge nue jusqu'à la fin de l'âge du bronze. L'assemblage de crustacés anglo-saxon est particulièrement important, il comprend diverses espèces et on l'interprète comme une preuve de transformation sur une échelle conséquente pour être commercialisé par la suite. Cela démontre une exploitation des ressources locales, bien qu'il n'y ait pas de preuve qu'on élevait des huitres à cette époque.

Finalement, les os humains de la préhistoire et des périodes romaine et anglo-saxonne représentent le plus important groupe de matériel de squelette étudié et publié à Thanet et constituera une riche ressource pour des recherches dans l'avenir. Le programme approfondi de datation au radiocarbone, essentiellement concentré sur les os humains, et l'analyse isotopique d'un groupe de sépultures de l'âge du fer moyen (indiquant un surprenant niveau de mobilité), apporte une nouvelle contribution à la valeur de cet assemblage.

Une partie importante et particulièrement réussie du programme archéologique fut l'implication de la commauté, qui a été complètement intégrée à ce projet. Un important programme d'inclusion fut mis en place pour permettre à la communauté locale riveraine du tracé de participer activement et d'être une part entière du déroulement des fouilles archéologiques. Une excavation en commun de l'un des fossés circulaires de l'âge du bronze a offert une expérience pratique et des bénévoles eurent l'occasion de participer au traitement des découverte et de l'environnement. Des expositions, de nombreuses visites d'écoles et autres lieux, des conférences et des journées portes ouvertes ont apporté activités et informations sur les dernières découvertes à une plus vaste audience sur Thanet et au delà, et un site web attitré a été créé. En tout, plus de mille personnes ont été en contact avec le projet d'une manière ou d'une autre et de nombreux milliers ont suivi ses progrès et ses découvertes.

Translated by Annie Pritchard

Zusammenfassung

Im Vorfeld des Baus der East Kent Access Road (Phase II) (im Folgenden EKA2) führte Oxford Wessex Archaeology (OWA) Joint Venture archäologische Untersuchungen durch, größtenteils zwischen November 2009 und September 2010. Die zweimonatige Vorbereitungszeit war überwiegend Vorfeld-Surveys gewidmet wie Feldbegehungen, Testgrabungen, Begehungen mit Metallsonden und begrenzten Suchgräben. Mehrere kleinflächige Ausgrabungen wurden nach der Hauptphase der Untersuchungen durchgeführt und alle Feldarbeiten waren Ende Mai 2011 beendet.

Die neue Straße von etwa 6,5 km Länge wurde an den Südhängen von Thanet gebaut und erstreckt sich nach Norden von der Ebbsfleet-Halbinsel an der Mündung des früheren Wantsum Kanals im Süden („Landschaft 3"), dann ostwärts über den Sporn von Cliffs End („Landschaft 2") und schließlich die Steilwand hinauf zum Kreidehöhenzug, der vom Manston Airport im Norden eingenommen wird („Landschaft 1"). Eine reiche archäologische Landschaft erstreckt sich über diese wechselhafte Topographie, und bereits während des Planungsstadiums wurde deutlich, dass die Straße nicht gebaut werden könnte ohne bekannte oder vermutete wichtige archäologische Fundstätten in Mitleidenschaft zu ziehen, und dass diese vermutlich auf dem größten Teil der Strecke zu erwarten wären. Deshalb wurde beschlossen fast den gesamten „Fußabdruck" der neuen Straße zu ergraben, eine Fläche von ungefähr 48 Hektar, so dass hierdurch ein einzigartiger und substanzieller Querschnitt durch diesen Teil von Thanet gewonnen wird – einer Landschaft, die faktisch eine Insel war, möglicherweise seit der Frühbronzezeit bis ins 15. nachchristliche Jahrhundert, wobei der Wantsum Kanals bereits im Spätmesolithikum überflutet wurde.

Diese Vorgehensweise erlaubte uns ein weitaus besseres Verständnis der Abfolge und Art der Siedlungsgeschichte zu gewinnen als es mit einer Reihe individueller und kleinerer Grabungen möglich gewesen wäre. Als Teil dieser Strategie wurde festgelegt, dass eine extensive Bewertung nicht kosteneffizient wäre, da sie nur bestätigen würde was bereits über die Archäologie und die Konsequenzen der Baumaßnahme bekannt war. Stattdessen wurde ein innovativer Ansatz gewählt, der eine große Menge an Informationen nutzte, die von früheren Untersuchungen in der Umgebung stammte, und der die Schaffung eines „Archäologischen Modells" einschloss, das die archäologischen Stellen prognostizierte, die entlang der Strecke zu erwarten waren. Der besseren Handhabbarkeit wegen wurde die Strecke in 29 archäologische „Zonen" unterteilt, die die Wechsel in der Topographie, Unterschiede im archäologischen Potenzial und Elemente des Bauablaufplans der Straße berücksichtigten.

Die Größe des Projekts war enorm, insbesondere unter der Voraussetzung des neunmonatigen Zeitfensters zur Durchführung nahezu aller Ausgrabungen, beginnend unter ungewöhnlich schlechten Winterbedingungen. Ein Team, dessen Größe oft mehr als 100 Personen umfasste, machte Entdeckungen aus nahezu jeder Epoche zwischen dem Paläolithikum und dem Zweiten Weltkrieg und erbrachte fast 30.000 Fundstellendokumente, eine gewaltige Menge an Funden und eine große Zahl an Bodenproben. Für die meiste Zeit der neun Monate verliefen die Ausgrabungen baubegleitend, d.h. im unmittelbaren Vorfeld der Bauarbeiten oder manchmal parallel mit diesen. Um dies zu ermöglichen war ein außergewöhnlich hoher Grad an Planung, Integration und Verständigung zwischen allen beteiligten Parteien notwendig um sicherzustellen, dass es keine Verzögerungen im Projekt gab. Innovative Feldmethoden wurden eingesetzt, einschließlich von Zonen, die im Vorfeld freigelegt, kartiert und beprobt wurden, gefolgt von jeweils passender detaillierter Ausgrabung auf der Basis eines maßgeschneiderten fundplatzbezogenen GIS, das Daten nutzte, die aus den Funden und der Verarbeitung von Umweltdaten resultierten, die parallel zur Ausgrabung erhoben und ausgewertet wurden. An dieser Stelle soll festgehalten werden, dass sowohl die archäologische Feldarbeit als auch das Bauprojekt termingerecht beendet wurden, was den Erfolg des gewählten Vorgehens bestätigt.

Mit Ausnahme eines einzelnen Feuersteinabschlags von vermutlich paläolithischer Zeitstellung und einem weiteren wohl jüngeren spätpaläolithischen oder frühmesolithischen Stück, bilden ein mesolithisches Scheibenbeil (und ein Abschlag eines zweiten Exemplars) und eine kleine Zahl von Mikrolithen und anderen diagnostischen Stücken der gleichen Epoche die frühesten Funde, die jedoch alle aus jüngeren Befunden stammen.

Zwei kleine Gruppen von Gruben mit zugehörigem Ensemble von Keramik und bearbeitetem Feuerstein datieren ins Frühneolithikum, was eine Seltenheit darstellt und zur neolithischen Landschaft gehört, die auch das Grubenwerk von Chalk Hill einschließt, das zu einem früheren Zeitpunkt untersucht worden war. Die

einzigen Befunde des mittleren Neolithikums waren eine Bestattung und eine einzelne Grube. Spätneolithisches Material war auch recht spärlich, jedoch konnte ein mögliches kleines henge-artiges Monument des Spätneolithikums identifiziert werden, das in der Frühbronzezeit umgearbeitet worden war um einen ungewöhnlich großen Ringraben zu schaffen.

Entlang der gesamten Strecke wurden elf Ringgräben sicher festgestellt, zusammen mit einem weiteren möglichen Exemplar. Thanet ist reich an Ringgräben, und es überrascht nicht, dass bis zu zwölf hiervon im Vorfeld der Baumaßnahme entdeckt wurden. Dennoch lieferten sie eine gute Gelegenheit um weitere Beispiele zu betrachten, die in der Landschaft verteilt sind, ihren Bauablauf zu untersuchen und mit ihnen verbundene Bestattungen zu erforschen. Die meisten der Ringgräben datieren in die frühe Bronzezeit und lagen generell auf Höhen, die den Wantsum Kanal oder die Pegwell Bay überschauten. Sie variierten beträchtlich im Durchmesser, vom kleinsten, einem mittelbronzezeitlichen Exemplar von ca. 7 m Durchmesser, bis zum größten von etwa 45 m Durchmesser, der vielleicht aus dem Spätneolithikum stammt. Gräber waren mit einigen dieser Monumente assoziiert, von denen eines eine besonders reiche Ausstattung enthielt, einschließlich eines einzigartigen dreifachen Food Vessel, d.h. eines aus drei Gefäßen zusammengesetzten Gefäßes, und einem Bernstein-„Knopf". Die Chronologie der Bestattungen aller Epochen konnte durch ein umfassendes Programm an C14-Datierungen geklärt werden.

Es konnten keine agrarischen oder Siedlungsbefunde aus der Frühbronzezeit festgestellt werden und auch für die Mittelbronzezeit liegen nur wenige Hinweise auf Feldsysteme vor. Die Aktivitäten der Spätbronzezeit konzentrieren sich weitgehend auf die Ebbsfleet-Halbinsel und die angrenzenden Hänge von Cottington Hill, mit einem weiteren Schwerpunkt nahe bei Cliffs End. Befunde von mindestens drei Siedlungen, einschließlich Spuren von Pfostenbauten, Erdwerken und Bohlenwegen, wurden dokumentiert, ebenso eine Anzahl an Gräbern. Zwei goldene Armbänder und eine Gruppe Bronzebarren und weitere Fragmente gehören sehr wahrscheinlich zu mehreren spätbronzezeitlichen Metallhorten, die bereits früher an der Engstelle der Ebbsfleet-Halbinsel gefunden wurden.

Die Eisenzeit ist die am besten belegte Epoche dieses Projekts, die Überreste von Siedlung, Erdwerken, Feldsystemen und Wegen fanden sich in der gesamten Landschaft. Der bedeutendste Fundplatz, überwiegend der frühen bis mittleren Eisenzeit zugehörig, lag auf einem Sporn bei Cliffs End mit Blick über die Pegwell Bay, wo ein großes trapezförmiges Erdwerk mit breiten, tiefen Gräben einen älteren Ringgraben schnitt. Innerhalb des Erdwerkes lagen ein Grubengebäude (eine vorgeschichtliche architektonische Struktur, die eine Besonderheit von Thanet zu sein scheint) sowie weitere Befunde, während in der unmittelbaren Umgebung Pfostenbauten, wahrscheinliche Getreidespeichergruben, Komplexe von Steinbrüchen und zahlreiche weitere Gruben angetroffen wurden, von denen mehrere Bestattungen enthielten (darunter auch jene eines Pferds) und die alle schließlich für die Entsorgung großer Mengen an Siedlungsabfall dienten.

Mehrere römische Wege wurden dokumentiert, von denen einige auf die Eisenzeit zurückgehen; diese Wege boten eine gute Gelegenheit um die antiken Verbindungswege dieses Teils von Thanet zu kartieren. An diese Wege grenzten Erdwerke unterschiedlicher Form, Feldsysteme, Gräberfelder und mehrere Siedlungsareale, von denen die meisten seit der Eisenzeit bestanden.

Die größte und langlebigste dieser Siedlungen lag an der Engstelle der Ebbsfleet-Halbinsel, in Sichtweite von Richborough, und wies eine bemerkenswerte Siedlungsabfolge von der späten Bronzezeit bis in die spätrömische Zeit auf. Dieses Gebiet liegt in der vordersten Front der wichtigsten historischen Invasionen, und die Siedlung umfasste neben Wegen, Erdwerken, zahlreichen Gruben, Brunnen und Gräbern auch eine recht große Zahl an Rundhäusern, wie sie nur selten in Thanet gefunden wurden, sowie mehrere jüngere Grubengebäude. Zu einem Zeitpunkt, etwa um die Mitte des 1. Jahrhunderts v. Chr., war ein Graben von erheblicher Größe angelegt worden um dieses strategisch wichtige Gebiet einzugrenzen, und es ist möglich, dass dieses Werk in Verbindung stand mit Cäsars Feldzügen, während vorstellbar ist, dass sich eine spätere Phase des Grabens mit der claudischen Invasion ein Jahrhundert später verbinden lässt.

Ein weiterer Schwerpunkt römischer Besiedlung, mit einer Häufung von Befunden der mittleren römischen Epoche, befand sich auf dem Kreidehöhenzug und fiel auf, da er fast ausschließlich aus Grubengebäuden bestand. Mehrere kleine römische Gräberfelder konnten ebenfalls in diesem Gebiet festgestellt werden und ein weiteres weiter südlich; mehrere wiesen sowohl Brand- als auch Körperbestattungen auf.

Zwei Bereiche früher bis mittlerer sächsischer Besiedlung wurden dokumentiert, mit einer möglichen chronologischen Überlappung, die vielleicht ein seltenes Beispiel für eine Siedlungsverlagerung am Ende des 7. Jahrhunderts ist und zu denen wahrscheinlich zeitgleiche Gräberfelder gehören. Eine verstreute Gruppe von Grubengebäuden, wahrscheinlich des 7. Jahrhunderts, lag an den unteren Hängen von Cottington Hill, und Teile eines oder mehrerer Gräberfelder lagen nahe eines Komplexes von Wegen weiter oben am Kreiderücken. Eine Reihe von Grabbeigaben zeigt, dass die Nutzung dieser Gräberfelder wohl von der Mitte des 6. bis ins frühe 8. Jahrhundert reichte. Eine Konzentration von etwas höher gelegenen Gruben nördlich von Cliffs End datiert etwa ins 8. Jahrhundert, wobei Spuren von Gebäuden, vermutlich in Pfosten- oder Schwellbalken-Bauweise, nicht erhalten blieben. Es fanden sich jedoch wichtige Hinweise auf die intensive Verarbeitung von Schalentieren, möglicherweise in Verbindung mit der religiösen Stiftung in Minster; mit der Siedlung verknüpft war auch ein kleines Gräberfeld. Ähnliche Reste der Verarbeitung von Schalentieren waren bereits zuvor in der Nähe bei Cliffs End Farm gefunden worden, was den Umfang dieser Aktivitäten bestätigt.

Eine scheinbar isolierte Gruppe von Gruben wurde der spätsächsischen Zeit zugeschrieben; die mittelalterliche Besiedlung scheint sich auf die Ebbsfleet-Halbinsel beschränkt zu haben. Hier waren zwei oder möglicherweise drei Höfe gegründet worden, deren Hauptnutzungsphase vom 11. bis zum 14. Jahrhundert reicht, was in etwa zeitgleich zur Landgewinnung des schnell versandenden Wantsum Kanals ist, welcher am Ende dieser Periode wahrscheinlich überwiegend aus Salzmarsch bestand. Die Rückgewinnung wurde von den Mönchen des Klosters St. Augustin, Canterbury, unternommen, die die nahegelegenen Erdwälle errichteten, die heute als Monks Wall, Abbotts Wall und der Boarded Groin überleben, jedoch waren die Siedlungen des Mittelalters in Thanet generell klein und verstreut.

Nachmittelalterliche und moderne Überreste waren nur wenige vorhanden, erstere belegt durch wenige Feldgrenzen, letztere vor allem aus einem Netzwerk von Gräben des Zweiten Weltkriegs bestehend, die um die südliche Umfassung des Manston Airfield, einer wichtigen Frontlinien-Kampfbasis im Zweiten Weltkrieg, angelegt worden waren.

Eine große Anzahl an Artefakten unterschiedlichster Typen wurde bei den Grabungen geborgen, darunter sowohl mehrere wichtige Artefaktgruppen als auch bedeutsame Einzelfunde. Flintartefakte waren allgegenwärtig, doch gab es bemerkenswerte frühneolithische und frühbronzezeitliche Konzentrationen, die eine in situ-Bearbeitung erkennen lassen, bei der unterschiedliche Rohmaterialquellen genutzt wurden. Die Potinmünzen der Eisenzeit vergrößern das bisherige Münzfundspektrum der Region erheblich, während die Ensembles eisenzeitlicher und römischer Metallverarbeitungsfunde große Fundgruppen dieser Perioden stellen. Von einiger Bedeutung sind die weiteren spätbronzezeitlichen Hortfunde der Ebbsfleet-Halbinsel, einschließlich eines seltenen Paars an goldenen Armreifen. Die Grabbeigaben der angelsächsischen Zeit, vor allem solche aus Metall, reihen sich in die national bedeutsamen Gräberfeldgruppen von Ostkent ein. Das prähistorische Keramikspektrum umfasst einen einzigartigen frühbronzezeitlichen dreifachen Food Vessel und wertvolle Gruppen früh- bis mitteleisenzeitlicher Keramik. Bei der römischen Keramik fallen individuelle Grabgruppen ebenso auf wie die Verwendung von Birkenpech zur Reparatur, eine Praxis, die auch von anderen Orten in Kent bekannt ist. Die angelsächsischen Grabgruppen umfassen weitere Exemplare merowingischer Flaschen, während das Alltagsgeschirr durch Keramik der Ipswich-Ware gekennzeichnet ist, die nun das größte derartige Ensemble in Kent stellt. Die mittelalterliche Keramik dagegen ist von recht bescheidenem Interesse. Trianguläre „Ziegel“, weitere Ofenausstattungen und Briquetagen liefern detaillierte Informationen zur Produktion von Salz in kleinem Maßstab, vor allem in der Eisenzeit, während zu den Steinartefakten auch Mahlsteine aus unterschiedlichen Epochen gehören, mit Hinweisen auf eine prähistorische Ausbeutung der Folkestone Beds.

Die Bedeutung der bioarchäologischen Funde liegt darin, dass sie zu den umfassendsten gehören, die von Thanet vorliegen. Bemerkenswert unter den Tierknochen ist das Vorhandensein von Geflügel in Kontexten der mittleren Eisenzeit, von vermutlich vorrömischen Eselknochen und von Damwild, das sicherlich römisch ist und nicht jünger. Wechselnde Anteile an Rindern und Schafen/Ziegen in der römischen Epoche reflektieren wohl wechselnde zivile und militärische Bedürfnisse. Verkohlte Pflanzenreste entsprechen weitgehend den Erwartungen, wobei C14-Daten die Nutzung von Lein im frühen Neolithikum ebenso bestätigen wie die kontinuierliche Anwesenheit von Nacktgerste bis in die späte Bronzezeit. Die Schalentierfunde aus angelsächsischer Zeit sind besonders umfangreich und schließen eine ganze Reihe an Arten ein, was sich als Hinweis auf die Verarbeitung in beträchtlichem Umfang für den anschließenden Handel interpretieren lässt. Dies zeigt die Ausbeutung lokaler Quellen, obwohl es keine Hinweise auf die Kultivierung von Austern in dieser Zeit gibt.

Schließlich repräsentieren die menschlichen Knochen aus prähistorischen, römischen und angelsächsischen Epochen die größte Gruppe an Skelettmaterial, das aus Thanet untersucht und publiziert wurde; sie stellen eine wichtige Quelle für künftige Untersuchungen. Das umfangreiche Programm von Radiokarbondatierungen, vor allem von Menschenknochen, und von Isotopenuntersuchungen einer Gruppe von Bestattungen der mittleren Eisenzeit (die einen überraschend hohen Grad an Mobilität anzeigen) tragen weiterhin zum Wert dieser Fundgruppe bei.

Ein wichtiger und besonders erfolgreicher Teil des archäologischen Programms war die Einbeziehung der Bevölkerung, der komplett in das Projekt integriert war. Ein umfangreiches „outreach programme“ wurde umgesetzt um der lokalen Bevölkerung entlang der Strecke zu ermöglichen sich aktiv zu beteiligen und sich als Teil der laufenden archäologischen Untersuchungen zu fühlen. Eine Gemeinschaftsgrabung eines der bronzezeitlichen Ringgräben bot praktische Erfahrungen, und es gab Möglichkeiten zur freiwilligen Mitarbeit bei der Bearbeitung der Funde und in der Bioarchäologie. Informationsveranstaltungen, zahlreiche Besuche in Schulen und anderen Einrichtungen, Vorträge und Tage der offenen Tür vermittelten die archäologischen Aktivitäten sowie Nachrichten über die neuesten Funde an ein breites Publikum in Thanet und darüber hinaus; zudem wurde eine rührige Internetseite eingerichtet. Insgesamt kamen mehrere tausend Personen auf verschiedenen Wegen in Kontakt mit dem Projekt und viele tausend mehr folgten seinem Fortschritt und seinen Entdeckungen.

Translated by Alexander Gramsch

Chapter 1

Introduction

This publication presents the results of the analysis of the archaeological discoveries ranging in date from the Palaeolithic to World War II made along the entire 6.5km route of the East Kent Access (Phase II), hereafter EKA2, road scheme (Fig 1.1). The publication has been prepared by the Oxford Wessex Archaeology Joint Venture (hereafter OWA), appointed in October 2009 by Volkerfitzpatrick Hochtief Joint Venture (VFH) to undertake archaeological works in advance of construction of the EKA2, a Kent County Council (KCC) highways project.

Project background

Although at around 6.5km the EKA2 is not a large road by any means, it provides an important and vital link in the major road network to the south of the Isle of Thanet connecting the dual carriageways of the A253 Thanet Way to the west of Manston Airport, the A256 Sandwich Bypass to the south and the major road junction known as the Lord of the Manor to the east of Manston Airport. The road is regarded as a key component in the regeneration of the area and East Kent in general. The EKA

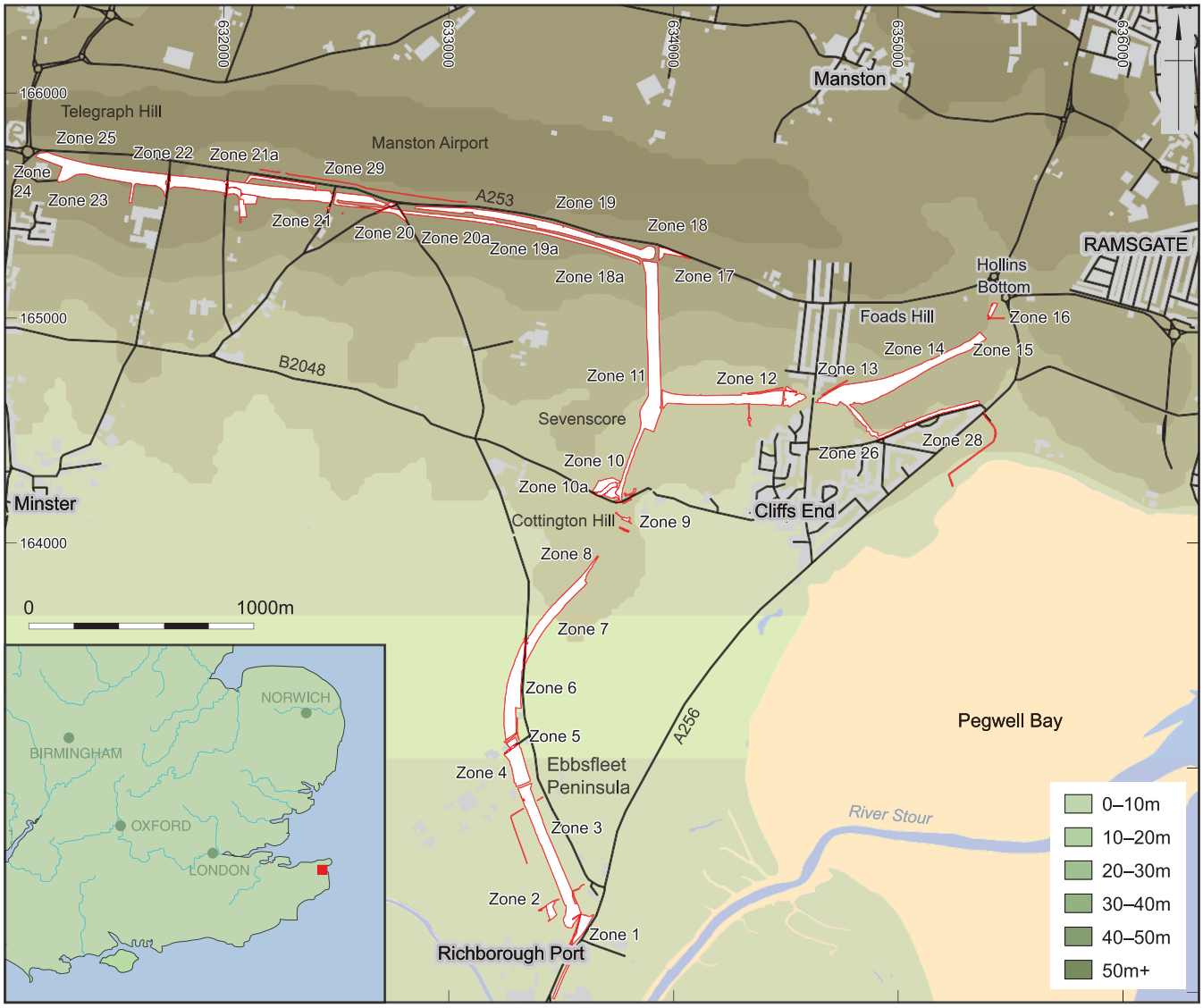


Fig 1.1 Site location plan, showing excavation zones against local topography (contains Ordnance Survey data © Crown copyright and database right 2014)

(Phase I) was an earlier road scheme to the south, which links with EKA2, and was designed to improve traffic movement to the north of Sandwich (see Fig 1.3). The latter scheme was constructed entirely on land reclaimed since the earlier medieval period and had only minimal archaeological impact. To the west, and also linking with the EKA2, the A253 Thanet Way improvements between Minster and Monkton, undertaken in 1994–5, saw the excavation of a rich archaeological landscape which was continued on the EKA2 (Bennett *et al* 2008).

Starting from a new roundabout close to the former (now demolished) Richborough Power Station in the south, the EKA2 runs northwards, rising gently from the Ebbsfleet Peninsula towards Cottington Hill, then crossing the railway on a new bridge and falling again before climbing the moderate slope of Sevenscore (Fig 1.1). On reaching the summit of the east-west ridge on which Manston Airport is sited, the road turns west and runs parallel to the runway and the A253, ending at the existing Mount Pleasant roundabout near Minster and Telegraph Hill. The new road has been linked to Ramsgate to the east by a spur road that runs east from a point approximately half way up the slope of Sevenscore. This spur road passes between Cliffs End and Foads Hill, through a tunnel beneath the railway, before joining the Lord of the Manor roundabout west of Ramsgate.

Over the 6.5km route of the EKA2 the ground rises from 1.5m aOD at the southern end of the Ebbsfleet peninsula, where it lies on Thanet Sands, to 52m aOD at the western end on the Upper Chalk ridge near Telegraph Hill, with the Cliffs End spur at between 20m and 30m aOD. Further details of the topography and geology are included below with the descriptions of the 29 individual zones (or groups of zones) defined along the route. A notable feature of Thanet is the absence of rivers, although there are several small streams, and springs occur in several places around the east, south and west of the island. Ponds were also common and provided a further source of water.

At an early stage in the planning of the road development it was recognised by Kent County Council that archaeology was one of the major considerations in delivery of a successful project. Regardless of the specific route of the scheme, any new road in what was known to be a particularly rich and important archaeological landscape would almost certainly entail disturbance of significant archaeological remains. Given the importance of the new road connection and the constraints of the existing network, the airport, Cliffs End and the international importance of Pegwell Bay there was no viable alternative to the scheme and the need for a programme of archaeological investigation was quickly established. The ensuing archaeological investigation became one of the largest ever carried out on the Isle of Thanet.

The understanding of the significance of the archaeological landscape and the potential impact of the scheme was first set out in a desk-based study undertaken by Oxford Archaeology in 2003 (Oxford Archaeology 2003). This highlighted the range and density of archaeological deposits in this part of Thanet which are extensive, multi-period and, in places, complex. Following completion of the Oxford Archaeology study in November 2003, further important archaeological investigations, associated with other development proposals, were undertaken in the vicinity of the proposed road, and these added significantly to the background information and understanding of the scheme. The largest and most relevant investigations were undertaken in 2004–5 in connection with the construction of the Weatherlees–Margate–Broadstairs Wastewater Pipeline (Egging Dinwiddy and Schuster 2009), which south of Manston Airport runs in close proximity to part of the EKA2. Indeed, at the Weatherlees treatment works at the southern end the two construction areas overlapped.

The results of these further investigations, in addition to the information included in the 2003 study, were incorporated in the second part of the *East Kent Access Phase II, Volume 2f (Archaeology)* document, issued in 2008 by the KCC Heritage Conservation team. It had already been decided to not undertake an extensive and costly programme of evaluation as this would only confirm the anticipated significant archaeological impact, and that instead the focus was on a programme of excavation that covered virtually the entire scheme. In lieu of the evaluation, and given the extensive knowledge gained from previous investigation in the landscape, an innovative approach was adopted that involved the construction of an 'Archaeological Model' that predicted the archaeological characteristics and assemblages that would be encountered in a series of zones. The 'Archaeological Model', divided the route into 28 separate 'zones' (Zones 1–28; Zone 29 was added subsequently, in 2010) (Fig 1.1) and for each of these provided details of the archaeological background and potential, and followed this with a 'Zone Archaeological Model' which outlined the types of archaeological features and deposits which were foreseeable within a particular zone. A summary of the archaeological background is included with the descriptions of the individual zones (or groups of zones) below.

In accordance with the conditions placed on the planning permission (TH/05/0964) for the EKA2, the KCC Heritage Conservation team requested that a staged archaeological programme should be undertaken in advance of construction of the scheme, the detail for which was set out in the first part of the *East Kent Access Phase II, Volume 2f (Archaeology)* document. In response to this document, OWA produced three high-level documents for the scheme, comprising a Project Design, which set out the methods by which the archaeological works would be undertaken, a Research Design and the Community Archaeology, Outreach and Publicity Strategy.

Topographical and geological background

by Elizabeth Stafford

The Isle of Thanet is located at the most easterly point of Kent, beyond where the Thames estuary opens to the North Sea. The topography of Thanet comprises a plateau lying above *c* 40m OD, with a chalk ridge rising

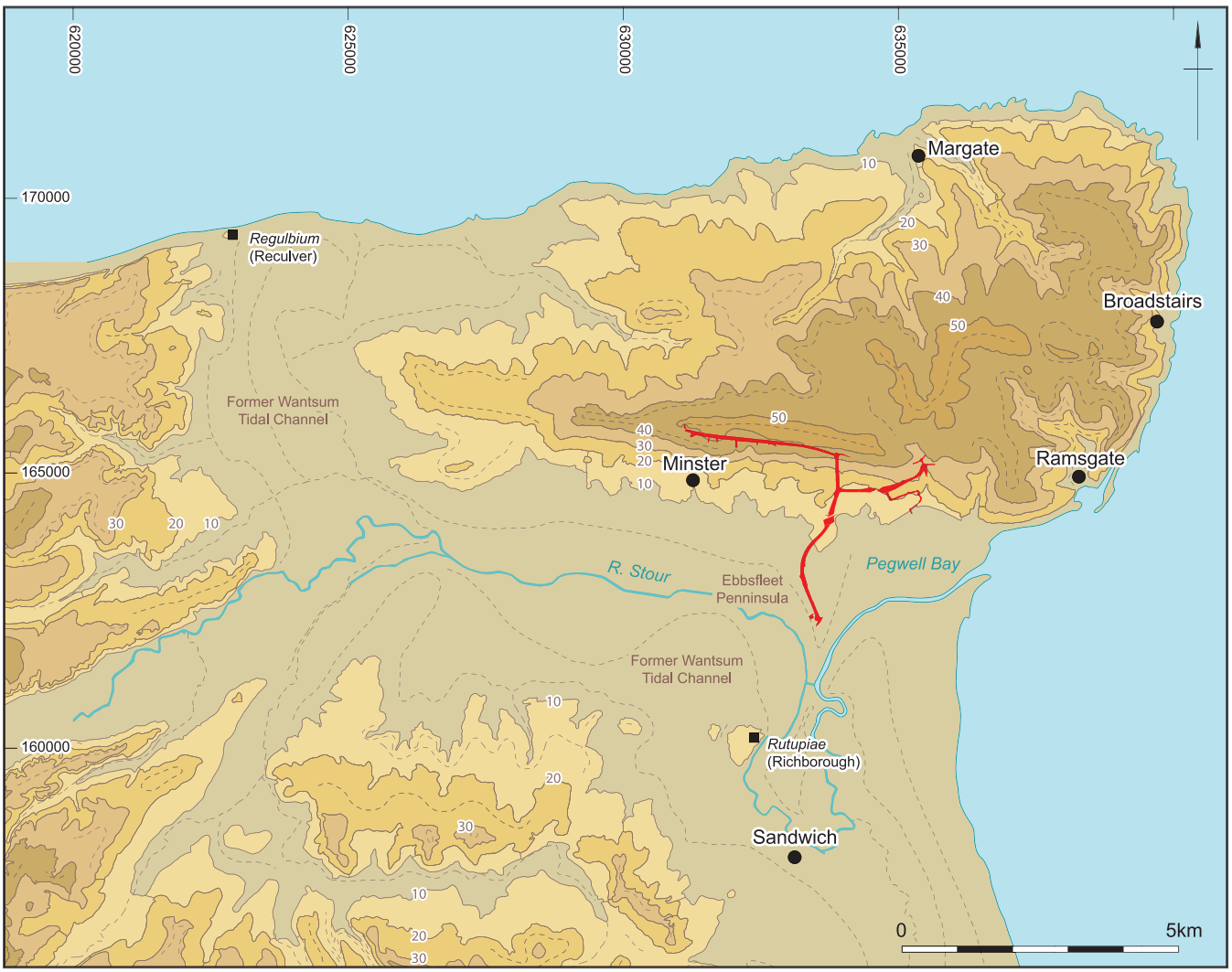


Fig 1.2 The Isle of Thanet, topographical background (contains © British Geological Survey and Ordnance Survey data)

to more than 50m OD dominating its southern side (Fig 1.2). The plateau slopes are incised by numerous dry valleys or coombes. On the seaward side the coast is characterised by steep cliffs and sandy bays. To the south and west Thanet is separated from the rest of Kent by a low-lying area, formerly occupied by the Wantsum tidal channel. The Ebbsfleet peninsula forms a low linear promontory of Thanet Sand extending into the Wantsum. Further details of the topography are provided in the Introduction to the Zones below.

Over the last 12,000 years changes in sea-level have profoundly affected the topography and landscape of the area. Towards the end of the last glacial period sea-level was considerably lower than at present (eg, Yokoyama *et al* 2000; Clark *et al* 2009), Britain was still connected to the Continent, the Thames was a tributary of the River Rhine, and vast areas now occupied by the North Sea were dry ground (ie, Doggerland, Coles 1998; Gaffney *et al* 2007; 2009). During the Mesolithic period, as the climate warmed and sea-levels began to rise due to melting of the northern glaciers, this area began to be inundated until the land bridge linking the Kentish Weald to the Boulonnais in northern France was finally breached *c* 6000 BC forming the Dover Straits. The history of the Wantsum channel, separating Thanet from the rest of Kent is the subject of considerable debate, although it is possible that a tidal channel was in existence at least from the Early Bronze Age (Coles 1998; Moody 2008, fig 17). Certainly the majority of Thanet was separated from the mainland including the part of the island which the EKA2 lies upon. The Wantsum was utilised as a major sea channel during the last 3000 years and at the beginning of the Roman period was probably at its maximum extent. Based on the distribution of tidal deposits the mouths were 3–4km across, narrowing to 1.8km between Wall End and Sarre and 1.5km between Sarre and the Stourmouth island; boreholes indicate a depth of at least 12m (Perkins 2007). However, the build-up of the 'Stonar Bank' (shingle) at its eastern end and deposition of sediment from the River Stour caused a process of gradual silting and, from the medieval period, managed reclamation of what was probably salt marsh at that time (Robinson and Cloet 1953; Moody 2008; Perkins 2007).

The solid geology of this part of north-east Kent is dominated by Cretaceous Chalk (135–64 ma years) which forms the underlying rock throughout the Isle of Thanet (Fig 1.3). The chalk is capped in places by Tertiary deposits (64–38 ma years), predominantly sands, silts and marls of the Thanet Beds. Superficial

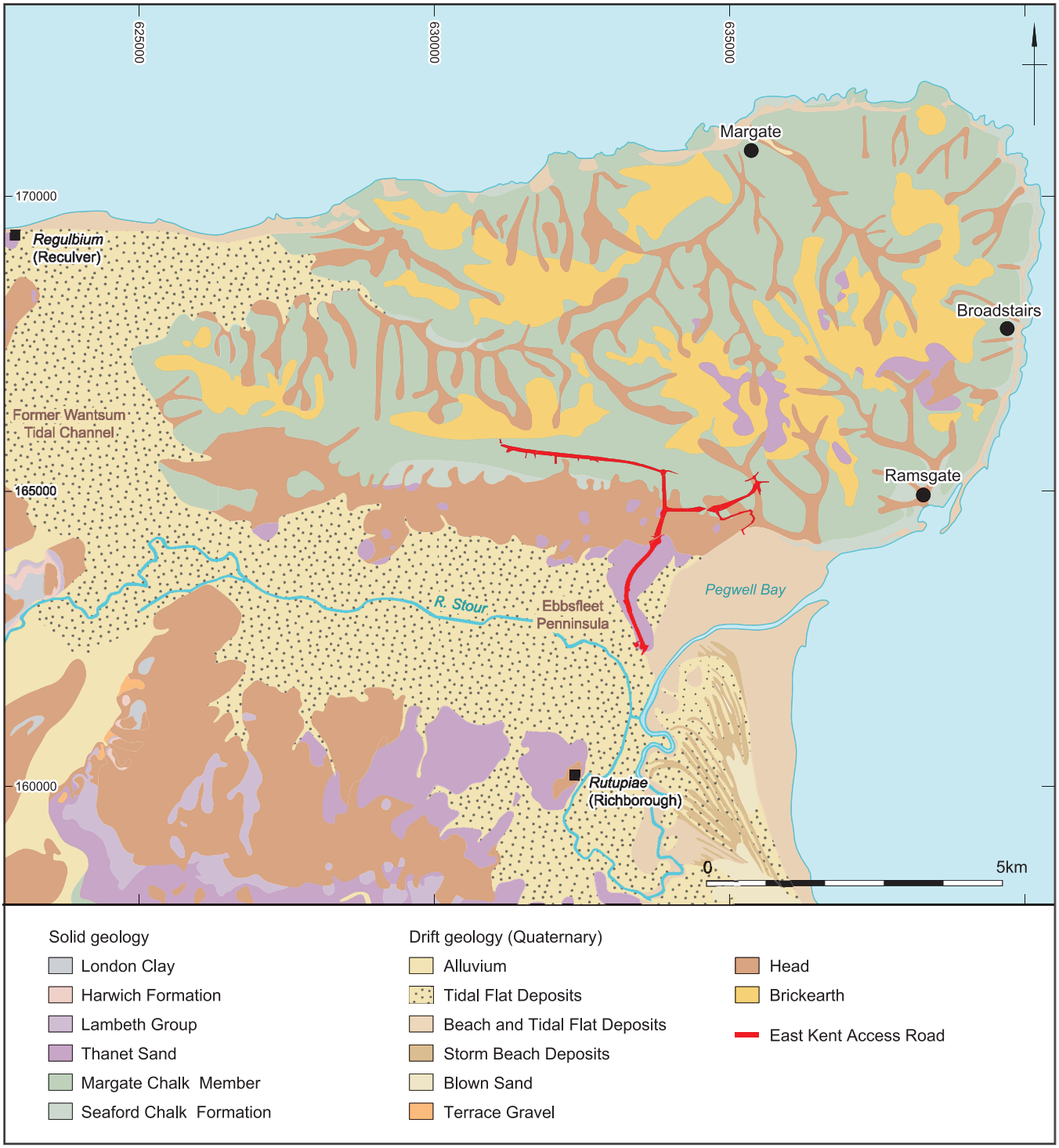


Fig 1.3 The Isle of Thanet, geological background (contains Ordnance Survey data © Crown copyright and database right 2014)

drift deposits of Quaternary Age overlie the solid geology. Pleistocene fine-grained loessic deposits (Brickearth), formed under cold periglacial conditions, cap the higher ground, and chalky rubble and slope deposits (Head) infill dry valleys. In places these deposits have been reworked by more recent colluvial processes. The loess sequences exposed in the cliffs have been the subject of considerable study (eg, Kerney 1965; Murton *et al* 1998; Wintle and Catt 1985; Weir *et al* 1971). Intercalated Late Glacial soil horizons have been identified at North Cliff, Broadstairs (Kerney 1965), and at Pegwell Bay an argillic brown earth overlying loess was sealed by colluvium containing Neolithic artefacts (Weir *et al* 1971).

In lower lying areas sequences comprise Holocene alluvium, tidal flats and beach deposits (Fig 1.3), although little archaeological work has been carried out to date on the Wantsum alluvial plain (Perkins 2007).

The soils along the route varied, usually reflecting the topography and the underlying geology. On the chalk ridge, near Manston, topsoil was generally very thin, having been substantially reduced by ploughing

and erosion, and this was also the case on parts of the Cliffs End spur. On the scarp slopes below the depths of topsoil (and subsoil) increased, and below this were extensive and in places significant depths of colluvium. This overlay Brickearth and sealed Anglo-Saxon features, and appears to have accumulated as a result of ploughing in the medieval period. Colluvial deposits were also present on the flanks of Cottington Hill and extended down to the neck of the Ebbsfleet peninsula. Ploughing had denuded the topsoil on the Thanet Sands forming the central ridge of the peninsula, but depths increased towards the edges, and alluvial deposits were encountered along the margin of the Wantsum Channel to the west.

Archaeological and historical background

The Isle of Thanet

The Isle of Thanet is distinctive, arguably unique, both in its physical setting – from perhaps the Early Bronze Age to medieval periods it was an island (approximately 85km^2), separated from the mainland by the Wantsum Channel (see above) – and in the range and density of its archaeological remains. The area flanking the northern side of the mouth of the Wantsum, through which the EKA2 passes, also has strong associations with history and myth, from the landing of the Roman army of Claudius at nearby Richborough, to the arrival of the invading Saxons or Jutes epitomised by Hengist and Horsa, the coming of the Christian missionaries led by St Augustine and later Danish raids. Today, these events and stories provide powerful connections with the island's past, which is often seen as having provided a gateway to new peoples, cultures and ideas through trade and invasion.

Landscapes

The archaeological landscapes of Thanet are recognised as being distinctive because of the ways past communities have used the different landscapes of the island, and the sheer density of remains from the Neolithic onwards. This is especially true for the Neolithic–Bronze Age and the Anglo-Saxon periods.

Some of the key characteristics of the landscape that make Thanet distinctive can be identified as:

- The soils of the Isle are widely regarded as having been very fertile and attractive to farming although, as elsewhere in southern England, the extensive and intensive farming of the landscapes only started towards the Middle Bronze Age;
- An increasingly intensive shaping of the landscape from the Neolithic onwards. This is reflected in the many multi-period archaeological sites;
- The development and change in ritual and funerary monuments, particularly of prehistoric date.

Peoples

Environmental changes, such as the rise in sea level, towards the end of the Mesolithic, gradually resulted in the creation of the Isle of Thanet and this will have helped to shape its distinctiveness. The gradual widening of the Wantsum Channel would have set it apart from the mainland physically. Thus it was at the same time an extremity of Britain and the closest point to continental Europe. Some of the key issues relevant here are:

- As an island, whose size, shape and coastline all changed through time, Thanet could have served as a gateway for people and ideas moving between mainland Britain and continental Europe along the principal routes of communication;
- The relatively narrow straits of the Wantsum Channel could, together with the topographical units of the Ebbsfleet Peninsula and Weatherlees Island and the development of Stonar spit, have provided a sheltered passage and a safe harbourage for vessels travelling between continental Europe and Britain;
- Alongside the movement of people and ideas would have been the exchange of goods. It is possible, for example, that settlements at the neck of the Ebbsfleet Peninsula were engaged in trade and exchange perhaps from the beginning of the Early Bronze Age;
- In the Roman period the military base and port at Richborough with its associated civilian settlement (*vicus*) was one of the major gateways to Britain. More locally, its imposing structures would have dominated the entrance to the Wantsum Channel, controlling the movement of troops, travellers and traders, and exerted a major influence on Thanet;
- In historic times Thanet and the region around it have been in the forefront of invasion and defence, from the invasions of Julius Caesar and Claudius to the late Roman creation of the defences of the Saxon Shore, to, in recent times, the Battle of Britain.

Background to the EKA2

The Isle of Thanet has a long and distinguished history of archaeological research by individuals, notably Dave Perkins, and organisations such as the Trust for Thanet Archaeology and the Canterbury Archaeological Trust. The earlier, large-scale work undertaken along the A253 Thanet Way road improvements between the Minster and the Mount Pleasant roundabouts, immediately to the west of the EKA2 scheme, is particularly relevant here, revealing features including a complex of Early Bronze Age funerary monuments, an unusual Roman rural settlement comprising sunken-featured buildings, an Anglo-Saxon cemetery and a medieval farmstead (Bennett *et al* 2008). A review of the Isle of Thanet up to the high medieval period has recently been published by Moody (2008) and the Isle has also been considered in the context of a county-wide survey (Williams 2007).

More specifically, the Oxford Archaeology study (2003) had set out in detail the high archaeological potential for the EKA2 route, and the results were subsequently incorporated in the KCC *East Kent Access Phase II, Volume 2f (Archaeology)* document of 2008. The latter included information from relevant excavations undertaken during the intervening five years, including a new service station at the Mount Pleasant (Minster) roundabout (Canterbury Archaeological Trust 2004; Gollop and Mason 2006), the Weatherlees to Margate Waste Water Pipeline (Andrews *et al* 2009), housing development at Cliffs End Farm (McKinley *et al* forthcoming) and, more recently, the Thanet Earth project (Canterbury Archaeological Trust 2010). In addition to these investigations were works connected to the development of the EKA2 scheme, comprising monitoring of geotechnical test pits (Trust for Thanet Archaeology 2006; 2008a) and the excavation of a new pond at Weatherlees Waste Water Treatment Works (Wessex Archaeology 2008). Further information is provided in the introduction to the zones below.

In order to facilitate the practical implementation of the KCC *East Kent Access Phase II, Volume 2f (Archaeology)* 'Zone Archaeological Model' in the field and during analysis, the 29 landscape-specific Archaeological Zones were grouped in the OWA Research Design (see below) into three broad physical Landscape Zones. These are summarised here, while general characteristics of each individual site zone are outlined further below.

Landscape 1: Chalk Ridge

This is formed by a chalk escarpment that runs east to west and represents the most northerly part of the route of the new road, running east to west between the Lord of the Manor and Mount Pleasant roundabouts (Pl 1.1). The escarpment carries the main modern route, the A253 road which might, on parts of its current route, have prehistoric origins. Some of the key topographical sub-divisions of Landscape 1 and the known archaeological sites are:

- Telegraph Hill: Zones 23 and 24 (Late Neolithic–Bronze Age funerary and monumental sites);
- Laundry Hill: Zones 21 and 22 (Neolithic 'focus'/Bronze Age enclosure);
- Thorne Hill: Zones 19 and 20 (Late Iron Age and Roman settlement and burials/Anglo-Saxon burials).

Landscape 2: Pegwell Bay/Cliffs End Spur

Landscape 2 is formed of a spur (and associated scarp slope) of land behind Pegwell Bay which starts at Chalk Hill and slopes in a south-westerly direction through Cliffs End and on towards the base of Sevenscore, where Zones 11 and 12 were located (Pl 1.1). Some of the key

Pl 1.1 Aerial photograph showing Cliffs End Spur in foreground (Zones 13–15) and Chalk ridge in background (Zones 17–20), with Manston airport in upper right hand corner (view from east)

topographical sub-divisions of Landscape 2 and the known archaeological sites are:

- Foads Hill, Zones 13 and 14 (Bronze Age burials and prehistoric funerary and monumental sites);
- Hollins Bottom, Zones 15 and 16 (Neolithic/Bronze Age funerary and monumental sites/Anglo-Saxon cemeteries).

Landscape 3: Ebbsfleet Peninsula

The southern slope has three transverse spurs, composed of Thanet Beds (sands), extending southwards as the Ebbsfleet Peninsula into the ancient Wantsum Channel (Pl 1.2). Some of the key topographical sub-divisions of Landscape 3 and the known archaeological sites are:

- Base of Sevenscore/Cottington Hill, Zones 8, 9 and 10 (Neolithic, Bronze Age, Iron Age Roman and Anglo-Saxon activity);
- Cottington Hill – Ebbsfleet Peninsula Saddle, Zones 6 and 7 (Bronze Age–Iron Age occupation and ritual activity, Roman settlement and occupation);
- Ebbsfleet Peninsula, Zones 1, 2, 3, 4 and 5 (Neolithic, Bronze Age–Iron Age occupation and ritual activity, Roman settlement and occupation, medieval farming).

Research designs

The OWA *Research Design* was intended to provide a strategic framework which would provide an informed context for asking questions and making decisions about interpretation at the start of, during and after the archaeological fieldwork. This was developed within the draft regional research framework which was being compiled for south-east England, as well as period-specific national research frameworks. The Research Design set out to:

- Briefly characterise the archaeological significance of the Isle of Thanet;
- Identify the opportunities that the scheme presented;
- Identify research questions and assess the data sets that may be available to answer those questions;
- Outline the landscape approach that was to be used throughout the project and to identify three key Landscape Zones;
- Promote a self-critical and reflexive approach to the archaeological works

Two overarching themes – *People* and *Place* – are identified in this *Research Design*. In combination, these themes help to define what is distinctive about the

Pl 1.2 Aerial photograph showing the Ebbsfleet Peninsula in foreground (Zones 1–8), with Chalk ridge upper left and Cliffs End Spur and Pegwell Bay upper right (view from south)

archaeology of Thanet within the context of current frameworks of archaeological understanding at a local, regional and national level. It was recognised that the categories of people and place are not exclusive, and that there has been continuing interplay between the physical characteristics of the landscape and how they have been changed by people. In addressing this interplay, a landscape-based approach was adopted, facilitated by the use of a scheme-wide GIS landscape model during the archaeological fieldwork and analysis.

On the basis of a review of recent and current work and an accompanying consultation, a series of research questions that are either specific to Thanet or its contribution to the wider setting were identified, which were refined and made more specific in the Updated Project Design issued as part of the Post-Excavation Assessment (OWA 2011):

Place

- How and why was Thanet distinctive from other areas?
- How has the sea influenced different forms of contact with continental Europe and the rest of Britain?
- How did the dynamic and changing coastline influence the past communities of Thanet?
- How did environmental change, both natural and caused by man, on land and at the coast influence the past communities of Thanet?
- What effects did the changing character of the Wantsum Channel have on Thanet?
- How were particular localities such as the Ebbsfleet Peninsula affected by the changing character of the Wantsum Channel?
- How, and why, did people use different parts of their landscapes?
- Have man-made changes caused earlier landscapes to be hidden or even partially or wholly destroyed?
- Were monumental landscapes for ceremony and burial deliberately created from the later prehistoric period onwards?
- Where were settlements sited, and why?
- How did economic and social factors influence the development of the landscape development as seen in land divisions, field boundaries and tracks etc. in the late prehistoric and historic periods?
- How did networks of settlement and communication influence the development of the prehistoric and historic landscapes?
- How were defensive landscapes created in the historic periods?
- How did the ownership of land influence the development of the landscape in the prehistoric and historic periods, for example through the first field systems or ecclesiastical, manorial and tied estates?
- Can the past landscapes identified in the archaeological works be understood in the context of the present landscape and its component units?
- Have wider cultural influences, for example aesthetics and recreation, influenced the development of the historic landscape?

People: movement of people, goods and ideas

- What evidence is there for assimilation and change through migration, invasion, exchange or the adoption of new cultural norms?
- Facing the ocean: did the people of Thanet view themselves and/or the Isle as being in some way different from the mainland?
- How did religious beliefs, mortuary rituals and funerary monuments change through time?
- Are any of the mortuary rituals seen in Thanet distinctive in Britain?
- To what extent can grave-goods be used as indicators of ethnicity and social persona?
- Why were so many hoards of Bronze Age metalwork deposited on Thanet and in what contexts?
- Can existing later prehistoric chronological and typological sequences for Thanet be refined more closely? And if so are they applicable more widely?
- When, and if, did Thanet emerge as a key location in networks of trade and exchange?
- What were the roles of early coinages in Thanet?
- Can the settlement evidence from the neck of the Ebbsfleet Peninsula be interpreted as indicating a Late Iron Age/early Roman settlement engaged in trade and exchange?
- What effects did the Roman military base and port at Richborough have on the contemporary settlement pattern and communications on Thanet?
- When did the Anglo-Saxon settlement of Thanet take place and how does the resulting settlement pattern compare to the wider Anglo-Saxon settlement pattern of East Kent?
- What was the nature of medieval settlement and farming in the area and how was this affected by the reclamation of the marshes around the Wantsum Channel?
- What changes did the defence of Britain in the two World Wars cause in this area, and in particular those relating to Manston airfield?

Fieldwork

Because of the exceptionally high density of archaeological features anticipated along virtually the entire route, as well as their vulnerability, the decision was made (*East Kent Access Phase II, Volume 2f (Archaeology)*) that all areas where road construction was likely to impact on buried archaeological remains would be stripped and subject to archaeological investigation, largely obviating the need for evaluation trenching in advance of area excavation. This approach, developed largely in Kent, reflects the experience gained on major developments elsewhere in the county, for example on High Speed 1 and, most relevantly, on the A253 Thanet Way improvements between Minster and Monkton undertaken in 1994–5. A particular benefit of this approach is that not only are individual sites investigated, but also the spaces between them, allowing the place of sites in the landscape to be better understood. It also allowed otherwise isolated but significant features, including several burials, which might have been missed by evaluation trenching and more targeted excavation, to be identified and excavated.

Within the areas stripped, largely in arable farmland, much of the archaeological resource was known to lie shallowly buried and, therefore, any modifications to avoid particular sites or monuments would almost certainly lead to an impact on other known, as well as unknown, buried remains. Furthermore, preservation *in situ* of any archaeological remains was only likely to be possible in exceptional circumstances. However, deeply stratified sequences were not anticipated, with the possible exception of Zone 6, and it was considered unlikely that any significant waterlogged deposits would be encountered.

The likelihood of any significant modern disturbance was considered to be generally low, and this proved to be the case when the route was stripped. The principal disturbances comprised an area of service trenches at the north end of Zone 3 and a former pond and adjacent area at the south end of Zone 4, all of which had been subject to some previous investigation (Wessex Archaeology 1992; Hearne *et al* 1995; Andrews *et al* 2009), an area levelled for barn construction in Zone 5, and the trenches for twin gas pipes that ran through Zones 18–20 and which had also been the subject of earlier recording (Perkins 1985). Ploughing had led to some truncation of archaeological deposits on the higher parts of the route, particularly where natural chalk lay directly beneath a thin cover of topsoil in some areas of Zones 13 and 19–24. However, nowhere was this considered a major factor limiting their survival and burials, for example, had largely escaped undamaged. In many zones elsewhere, varying depths of colluvium had served to protect archaeological deposits from any significant damage through post-medieval and modern ploughing.

There were some changes to the footprint of the scheme following the commencement of archaeological fieldwork. In particular, Zone 10 was extended to include an adjacent area (Zone 10a) designated for a balancing pond (to replace one proposed for Zone 9), an additional area was investigated in Zone 21 to incorporate the revised location of another balancing pond, and a further area (Zone 29, within Manston Airport) was

Pl 1.3 Excavations in progress in Zone 13, immediately ahead of tunnel approach works (view from west)

added to the programme during the course of the scheme. Zone 25, within the south-west corner of Manston Airport, was excluded from the scheme in May 2011. An area adjacent to Zone 4, referred to here as 'Weatherlees Pond', was excavated in 2008 in advance of the scheme, as part of ecological mitigation works.

Three principal stages of fieldwork were undertaken, comprising a series of *Preliminary Surveys*, followed by *Strip, Map and Characterisation* and then, where required, *Further Archaeological Works*, the latter normally comprising detailed excavation. In addition to these elements, evaluation trenching was undertaken in Zone 2 and Zone 26 and various watching briefs and targeted watching briefs (the latter allowing detailed excavation where necessary) were carried out, including monitoring of the removal of possible unexploded ordnance.

The main phase of excavation, as well as the preliminary surveys, took place over a relatively short period between November 2009 and October 2010, dictated by the EKA2 construction programme which, as an unavoidable necessity, overlapped from spring 2010 with the archaeological programme (Pl 1.3). Additional small pieces of work were carried out subsequently between then and May 2011 when archaeological fieldwork was completed. During this 18 month period approximately 40 hectares were subject to excavation involving up to 140 site staff at any one time, working concurrently on as many as 12 zones.

Preliminary surveys

The *Preliminary Surveys* comprised surface collection survey, metal detector survey and topsoil/subsoil test pitting, undertaken in November–December 2009. These surveys, designed principally to assess the presence, density and distribution of artefacts in the ploughsoil, covered almost the entire route, but excluded areas where they were not required (eg, where the ground level was to be raised or the topsoil undisturbed) or where ground conditions did not permit (eg, covered with tarmac or concrete). The intention was to try to capture information about the use of the landscape that may survive in the ploughsoil rather than relying solely on what survives in the cut features, particularly relevant for earlier prehistoric activities. All the material collected is tabulated in Table 1, and significant finds (eg, coins and worked flint) have been incorporated in this publication report.

In addition, a topographic survey was undertaken on the known (from aerial photographs) sites of two of the

Table 1.1 Totals of finds recovered from different types of pre-excavation survey

Material	*Fieldwalking*		*Test Pits*		*Metal Detecting*	
	No.	*Wt. (g)*	*No.*	*Wt. (g)*	*No.*	*Wt. (g)*
Animal Bone	19	147	19	110	-	-
Burnt Flint	854	15,852	170	3993	-	-
CBM	5045	68,781	561	8503	-	-
Clay Pipe	23	43	12	26	-	-
Fired Clay	7	190	2	37	-	-
Worked Flint	304	-	179	-	-	-
Glass	48	339	40	226	-	-
Human Bone	1	17	8	4	-	-
Metalwork	12	-	21	-	1039	-
Gold	-	-	-	-	*2*	-
Silver	-	-	-	-	*13*	-
Copper alloy	-	-	*1*	-	*479*	-
Lead	-	-	*2*	-	*334*	-
Iron	*12*	-	*18*	-	*180*	-
Other metal					*31*	
Pottery	1226	7435	289	1592	-	-
Prehistoric	*65*	*644*	*61*	*274*		
Roman	*303*	*1856*	*104*	*743*		
Medieval	*366*	*1581*	*40*	*122*		
Post-Medieval	*436*	*3013*	*70*	*399*		
Undated	*56*	*341*	*14*	*54*		
Shell	42	210	81	514	-	-
Slag	6	178	3	40	3	97
Stone	4	22	2	11	-	-

ring-ditches in Zone 23 to establish whether any upstanding mound survived in either example. Full details of the methodologies for the preliminary surveys are set out in the Project Design but summaries are presented below.

Geophysical survey was not undertaken as it was considered that the geologies in some areas would be unresponsive, particularly where colluvium was present, and the presence of services in some areas (Zones 19 and 20) would preclude generation of any useful results.

Surface collection survey
Collection of material was carried out on a 20m grid aligned parallel to the line of the proposed road scheme. In order to maximise the recovery of surface artefacts, two transects, set 10m apart, were walked within each collection unit. Collections within each unit comprised all material visible in a zone 1m to either side of the centre line of the two transects comprising that unit.

Metal detector survey
Survey transects were spaced 10m apart with individual finds bagged in individually numbered bags and recorded. Metal detectors were set to recover ferrous as well as non-ferrous metals and all materials were retained and individually bagged. Locations of finds were recorded using a differential GPS.

Topsoil/subsoil test pitting
Test pits were excavated in areas designated in the KCC Draft Project Design. They were excavated on a grid spaced at 50m intervals. The numbers of test pits and locations took into account the final land-take and adopted a 'best fit' within the shape of the scheme. Test pits were 1m x 1m in plan and were excavated by hand in 0.1m spits to the surface of the 'natural' or to the surface of preserved archaeological deposits, whichever was encountered first. A 30-litre soil sample was recovered from each spit and sieved through a 10mm mesh and all spoil scanned with a metal detector. Archaeological features were not excavated.

Discussion of results
Overall, the Preliminary Surveys provided relatively little information to supplement that obtained from the subsequent stages of fieldwork, and did not require any changes to the methodologies adopted for that work. Virtually all of the metal detector finds were of modern date, a few were post-medieval and just a handful Roman. The paucity of pre-modern material can in part be attributed to past metal detecting of the topsoil, as well as the deposits of subsoil and colluvium that masked earlier remains, particularly of Roman date, in some areas. The latter is also likely to explain the low levels of worked flint and pottery recovered from fieldwalking. Only the test pits produced a little more, in some cases, but there was insufficient worked flint to make any confident predictions about earlier prehistoric activity and the location of this within the landscape. The results were presented in a series of *Preliminary Survey Reports* and were also incorporated into the GIS landscape model.

Strip, map and sample

The overall process was designed to uncover and begin to understand the 'big picture' by widespread stripping and then focusing attention on the detailed excavation of those parts of the landscape and features that were most significant to more fully understanding the archaeological sequence, a strategy informed by a process of sample excavation and characterisation.

Excavation
The topsoil, subsoil and, where present, colluvium along the route was stripped under archaeological supervision, commencing in December 2009, except where it was agreed that, due to the limited impact of the scheme in specific areas, archaeological deposits could be preserved *in situ*. The aim of this stage was to characterise, within each zone or defined area, the archaeology present, and this would then enable a robust programme of *Further Archaeological Works* to be designed, approved, programmed and implemented.

Machine stripping was undertaken mainly by 360° tracked excavators, provided by Volkerfitzpatrick Hochtief Joint Venture, working under constant archaeological supervision. Successive spits of not more than 100mm were removed, to the top of archaeological levels or the top of undisturbed natural, whichever was the higher. Metal detecting was undertaken throughout stripping and subsequent hand-excavation. All spoil was stored within the footprint of the new road, requiring that some zones where the land-take was relatively narrow (eg, Zones 11 and 12) be stripped and excavated as a series of separate areas in order to accommodate temporary bunds of topsoil, subsoil and, in some cases, colluvium.

As machine stripping progressed archaeological features were mapped by either GPS or TST (Total Station), using a control framework of survey points related to the Ordnance Survey grid, and a digital base plan generated. The digital base plan was then used to devise an appropriate sampling strategy, which was submitted to the Principal Archaeological Officer for approval. This sampling strategy plan formed the basis of the characterisation investigation, which aimed to establish and assess the character, complexity, preservation, extent, depth, date etc of the archaeological remains present through an appropriate number of interventions, supported by information provided through a rapid on-site assessment of the associated finds and environmental assemblages.

Throughout the archaeological works a GIS was used to map landscape and archaeological data (including ongoing finds and environmental assessments) and this information was fed back to the fieldwork team in an iterative process to assist in making informed decisions in relation to the *Research Design*.

The iterative process involved the constant attendance of the KCC Principal Archaeological Officer who worked closely with the excavation team to agree strategies on a day-to-day basis. The GIS based system allowed feedback in many cases within a 24 hour period that enabled informed decisions to be made quickly and allowed the complex excavation and construction programme to remain on schedule and respond to changes in priorities.

Recording

The recording system used on the EKA2 has been developed over 15 years of OWA and Framework joint ventures. The system is specifically designed to be reflexive and iterative, with the GIS Landscape model updated on a daily basis. At all stages of work, plans were digitised and context information entered into the scheme database which was used to support the GIS Landscape model. Harris matrices were compiled where necessary and context grouping was carried out in parallel with fieldwork.

Full details of the recording system, as well as of excavation procedures, finds and environmental procedures and the approaches to the excavation of human burials adopted are provided in the *Project Design*, and were implemented in both the *Strip, Map and Characterisation* and *Further Archaeological Works* stages of works.

Characterisation report

Following completion of characterisation within each zone or specified area a report, the *Characterisation Report*, was prepared, except for a relatively small number of the zones where it was agreed (with KCC) that this was not required. This was most often because of the compressed timescale for completion of the archaeological works programme, partly resulting from delays caused by inclement weather conditions during the early stages of fieldwork which resulted, in some zones, in the archaeological investigations taking place immediately in advance of construction works. In these cases, and where *Further Archaeological Works* were deemed necessary, a back-to-back approach was adopted, with *Strip, Map and Characterisation* being followed immediately by *Further Archaeological Works*, with no break for reporting (for example in Zone 4). Here, the iterative dissemination of information between the excavation teams, finds and environmental teams and those monitoring the excavations allowed decisions to be reached with as much information as was needed to move forward. In a few zones, where there were relatively few archaeological features and the sequence was not very complex (eg, Zone 17), all excavation was completed as part of the *Strip, Map and Characterisation* phase.

The *Characterisation Report* included, as a minimum, a site location plan, a plan showing interventions and provisional feature phasing, a summary of the archaeological sequences by period and phase, quantification tables of stratigraphic, finds and environmental data together with an explanation of how this compared with the original archaeological model for the zone, and a summary of the significance of the features and deposits revealed, related to previous understanding and evidence contained within the Landscape and Archaeological Model and to the Research Aims set out in the project's *Research Design*.

Further archaeological works

The *Strip, Map and Characterisation* stage allowed a revised set of Research Aims to be formulated and these were set out in a *Further Archaeological Works Design* document. The revised set of Research Aims were generally informed by the approach and framework set out in the *Research Design*, but also included further questions that had not been set out in the *Research Design* and were only formulated at the *Strip, Map and Characterisation* stage. The *Further Archaeological Works Design* also included a statement of the strategy proposed for addressing the Research Aims, a methodology for the *Further Archaeological Works* and a plan showing the location and extent of the proposed works.

During *Further Archaeological Works* sites were excavated and recorded in accordance with the agreed excavation and sampling strategy set out in the *Further Archaeological Works Design* (FAWD) and developed through the focus provided by the relevant (ie, to each zone) research priorities as set in the *Research Design*. Finds and environmental information was entered into the scheme database as processing and cataloguing proceeded, with as much of this as possible undertaken in parallel with the fieldwork, in dedicated facilities established within the main site compound.

The approach was iterative with the sampling strategy being continuously developed and adapted throughout the course of the individual excavations in consultation with the Principal Archaeological Officer for KCC and VFH's archaeological consultant (Atkins), various OWA period, finds and environmental specialists, and English Heritage (EH) representatives. This allowed research priorities to be updated and modified as the project developed.

Community archaeology and outreach

Community archaeology and outreach formed a significant and integrated element of the EKA2 archaeological project, and its implementation followed the requirements set out in the project design produced in 2008 by the KCC Heritage Conservation team (Part 1 of *East Kent Access Phase II, Volume 2f (Archaeology)*). Kent County Council has recognised the importance of local communities learning about, and wherever possible, seeing the archaeological work that is taking place on sites within the county. This has far too often not been achieved on many sites for a variety of reasons. The EKA2 archaeological programme was seen as a huge opportunity to demonstrate that even on the most complex of developments, local communities can engage with the archaeological works and gain access to their heritage, as well as leaving a legacy of an increased

appreciation and understanding of their heritage.

In order to accommodate community archaeological works within the scheme an area of the route was designated as a community excavation site. The most appropriate area for such a site, given the requirements of the earthworks programme, was within Zones 22–23 which was not required for release to the main contractor until June 2010. By designating a single site for community excavation, this allowed the health and safety aspects of volunteers working within a development site to be more closely managed.

The community excavation focused on one of the ring-ditches in Zone 23 (Pl 1.4) and an adjacent late prehistoric field and enclosure system in Zone 22. Virtually all of the excavation and recording of these features was undertaken by volunteers, with supervision and training provided by OWA staff. Approximately 90 people took part on the four-week long excavation, with an average of 14 per day, which ran over weekends and some evenings as well. Of these people, 91% came from Thanet, with most of the others from East Kent, and they gave an overwhelmingly positive response to the experience.

The community excavation featured in one of two open weekends that were held in May and June 2010, each of which attracted almost 1000 visitors (Pl 1.5). There were also several group visits to the community excavation and Cliffs End residents were given the opportunity to have guided tours of the excavations going on in their area.

In addition to the fieldwork, volunteers participated in finds and environmental work throughout most of the duration of the project, working alongside the OWA specialists based in the main site compound.

The outreach programme was a creative and innovative piece of work which promoted good local relations and went beyond the confines of the excavation. The main phase of this programme took place over four months between March and June 2010, and was co-ordinated and largely run by David Crawford-White, a community archaeologist with a wealth of experience. At the beginning all schools, libraries and a range of other institutions and meeting places in Thanet were circulated with information about the EKA2 archaeological project. Then, two stand-alone exhibitions were prepared which were displayed at 12 venues around Thanet for up to four weeks at each place. Eight road shows were undertaken involving staff from OWA and various other organisations (including the Trust for Thanet Archaeology, Portable Antiquities Scheme, the Isle of Thanet Archaeological Society and the Powell Cotton Museum) which went to libraries, the Powell Cotton Museum, the Holiday Inn, and the main shopping complex at Westwood Cross on two occasions, to explain the archaeology of the EKA2 and talk about the latest discoveries. Similar displays were also done for the Kent County Show at Detling and the Archaeology Day at the Powell Cotton Museum in Quex Park.

Twenty-one schools were visited, mainly primary and junior, but some older groups and special needs, where between 6 and 600 each day were given presentations and engaged in activity workshops. A further 400 people from 18 organisations were also given presentations or came to the site, including the local Young Archaeologists Club, Rotary Clubs, residents associations, Mencap, Women's Institutes and a group from Pfeizer's, who also took part in the community excavation.

Throughout the fieldwork publicity was generated through the media and a dedicated website, reaching many more than the several thousand who had come into contact with the archaeological project directly through the various outreach activities and open days.

Following the completion of fieldwork, there have been further exhibitions, presentations to a variety of groups in Thanet, lectures at national conferences or meetings, and a major article in *Current Archaeology*.

Pl 1.4 Beginning of Community Excavation in Zone 23, following cleaning of Early Bronze Age ring-ditch 193123 (view from north)

Pl 1.5 Open Day in Zone 13 – Early-Middle Iron Age sunken-featured building 174060 in foreground (view from east)

Post-excavation and publication

Post-excavation work fell into several phases and, like the fieldwork, was subject to very tight deadlines for a project of this scale. However, it should be re-iterated here how much of the data entry, including that from the finds and environmental processing, took place on site in order to inform the *Preliminary Survey Reports*, *Characterisation Reports* and *Further Archaeological Works Designs* produced during the course of the fieldwork.

Immediately following the completion of fieldwork in autumn 2010 an interim report was prepared. This included summaries of each of the excavated zones, and was issued in early 2011. The next stage was a post-excavation assessment of the archaeological sequences within each zone, largely undertaken by the project officers responsible for the excavations in the field. Specialists undertook assessments of the various components of the finds and environmental assemblages, and recommendations for further analysis were prepared, with the over-arching assessment report, including an updated project design, issued in the summer of 2011 (OWA 2011).

Following approval of the assessment report, post-excavation analysis began in autumn 2011 and was completed by the end of 2012. Throughout both this and the assessment phase, results from the various studies were fed back into the scheme GIS Landscape model in order to inform the ongoing analyses. The resulting publication, in two volumes, reflects the scale and importance of the EKA2 project, underpinned by the scheme-wide GIS Landscape model.

Volume 1 presents an introduction to the project, a general account of the archaeological features by chronological period (and within that by zone or groups of zones, reflecting different Landscape Zones), and period-specific discussions of the character, environment, economy and chronology of the sites in relation to local and regional landscapes and settlement patterns. These reflect the archaeological remains of the earlier prehistoric, later prehistoric, Roman, and Anglo-Saxon and later periods. The description in the period-based chapters is of a fairly condensed nature and is site-specific. It is followed first by wider ranging discussion sections and then by short summaries of all the relevant classes of artefactual and environmental evidence prepared by the relevant specialist contributors.

Volume 2 presents detailed specialist reports on all finds, human bones, and faunal, marine, plant and other environmental remains. In addition to these printed volumes, additional data are available in the project archive.

Introduction to the Zones

Ebbsfleet Peninsula (Landscape 3)

Zones 1–3

Zone 1 lay at the southern end of the Ebbsfleet peninsula, in a relatively low-lying location at the

junction of the former Wantsum Channel and Pegwell Bay. Until the medieval period the Ebbsfleet peninsula was surrounded by water on all but the northern side, though by this time there is likely to have been extensive marsh land bordering its edges. As the Wantsum Channel silted up further land reclamation took place through monastic inning of the area and associated drainage, probably converting salt marsh to grazing marsh. No previous archaeological investigations had taken place within or close to Zone 1, the closest being approximately 100m to the north (see Zones 3 and 4).

A narrow triangular area was left un-investigated towards the southern end of the zone due to the presence of services, though a watching brief was maintained on a new service trench which crossed this area. A watching brief was also maintained on a service trench which extended to the east of the zone, towards Ebbsfleet Lane, but no features were identified within the narrow confines of the trench.

The excavations in Zone 1 exposed a small part of the south-west edge of the Ebbsfleet peninsula and adjacent alluvial deposits, though no significant waterlogged remains were encountered within the latter or in any of the archaeological features. The Thanet Beds forming the peninsula sloped down from 4m aOD at the north end of the zone to 1.5m aOD in the south. Deeper excavations to the west for the installation of storm-water tanks (Zone 1a) revealed almost exclusively made ground and no deposits of palaeo-environmental interest.

Zone 2 lay to the west of Zone 1, towards the southern end and on the west side of the Ebbsfleet peninsula. No previous archaeological investigations had taken place in the immediate vicinity, but an evaluation was undertaken prior to excavation to determine the depth at which any significant archaeological deposits occurred. This was because the zone extended across the edge of the Wantsum Channel, where it was proposed to build a barn, the construction of which was likely to have only a minor or no impact on deeply buried archaeological deposits in this area. The evaluation demonstrated that channel fills were present in the western half of the zone, though no deposits of palaeo-environmental interest were identified, and subsequent excavation was, therefore, largely confined to the higher ground in the eastern half of the zone.

The excavations in Zone 1 had revealed a small part of the south-west edge of the Ebbsfleet peninsula and adjacent alluvial deposits, and in Zone 2 the uppermost, slightly peaty deposits along the gently sloping western edge of the peninsula were exposed. However, as in Zone 1, no significant waterlogged remains were encountered. Further excavation was undertaken within Zone 2 in the summer of 2012, in advance of the construction of a digester unit. This revealed a continuation of the medieval ditches recorded in Zones 1 and 2 and a small number of discrete features, all of probable 13th–15th century date.

The Oxford Archaeology Desk-Based Assessment (Oxford Archaeology 2003) identified a large, ovate cropmark interpreted as an enclosure of possible Bronze Age date, falling partly within Zone 2 (and also in Zone 1). However, excavation revealed no trace of such a feature, which must now be interpreted as a reflection of some variation in the topsoil or the crop itself.

Zone 3 occupied a large strip along the central 'spine' of the Ebbsfleet peninsula. The Thanet Beds forming the peninsula sloped down very gently from 4m aOD at the south end of the zone to 3.5m aOD in the north, and then rose again into Zone 4. A slight knoll in the central part of Zone 3 was at 6.9m aOD.

Earlier excavations in the vicinity had demonstrated that the Ebbsfleet peninsula has been an attractive location for activities dating back at least to the Early Bronze Age (Perkins 1992a; Wessex Archaeology 1992; Hearne *et al* 1995; Wessex Archaeology 2004; Wessex Archaeology 2008; Moody 2008; Andrews *et al* 2009). In particular, previous, limited archaeological work within or close to Zone 3 provided evidence for medieval farming activity, though it was suggested that any remains would be heavily truncated (Perkins 1992a). However, the EKA2 excavations showed this not to be the case.

In addition to excavation within the zone, a watching brief was maintained on a service trench which ran parallel to the west of and crossed the zone, but this was almost entirely devoid of archaeological features.

Zones 4–5

Zones 4 and 5 occupied the central 'spine' at the neck of the Ebbsfleet peninsula where it is joined to the Isle of Thanet. The Thanet Beds forming the peninsula here rose steadily from a low point between Zones 3 and 4 at 3.5m aOD to 6m aOD in the north.

Several earlier investigations both within and to the east and west of Zone 4 have revealed a substantial quantity of complex archaeological features and deposits, providing further evidence that the Ebbsfleet peninsula – and this part in particular – has been an attractive location for activities dating back at least to the Early Bronze Age (Perkins 1992a; Wessex Archaeology 1992; Hearne *et al* 1995; Wessex Archaeology 2004; Wessex Archaeology 2008; Moody 2008; Andrews *et al* 2009). Archaeological remains appeared to be denser on the eastern side of the peninsula, facing Pegwell Bay, and included a small ring-ditch of probable Late Neolithic or Bronze Age date, three Late Bronze Age metalwork hoards as well as a possible midden deposit and a complex of broadly contemporary ditches and pits, and Iron Age, Roman and medieval enclosures and field systems. Also identified was a sequence of substantial Late Iron Age–early Roman ditches extending east-west across the peninsula, at least two burials inserted into the top of the ditches, and the flint cobble footings of a rectangular Roman building.

A large area in the central western part of Zone 4 had been impacted during construction of the Weatherlees Waste Water Treatment Works (WWTW) in the early 1990s, particularly by the digging of a large pond, several pits and the installation of services. This area was subject to archaeological investigation at the time, as was the footprint of the road to the south which provided access to the Weatherlees WWTW (Wessex

Archaeology 1992; Hearne *et al* 1995). The part of the access road that crossed Zone 4 had been built over and underlying deposits not disturbed by construction of the EKA2. The southern part of Zone 4, to the south of the access road, was not fully stripped due to the presence of services, but previous work (Wessex Archaeology 1992; Hearne *et al* 1995) showed that this lay in a slightly lower lying 'saddle' that was probably prone to periodic flooding.

The road between Zones 4 and 5, which provided access to Ebbsfleet Farm (which probably has medieval origins) remained in use throughout 2010 and was removed in May 2011, allowing excavation to be completed in this area. Any pre-modern features in the western half of Zone 5 had been completely truncated by earlier ground reduction for the construction of a barn associated with Ebbsfleet Farm to the west.

Weatherlees Pond

In the summer of 2008 an archaeological excavation was undertaken in conjunction with construction work at the Weatherlees Waste Water Treatment Works (WWTW). The construction work comprised significant earthmoving and the excavation of a new pond that formed part of the advance ecological mitigation works for the development of the EKA2 and, therefore, the results from the 2008 excavation have been incorporated within this publication report.

The Weatherlees Pond site was located 30m to the west of Zone 4, and an area of *c* 0.1 hectares was stripped to archaeological levels. Considerable landscaping had been undertaken during the construction of the Weatherlees WWTW in the 1990s, including the excavation of a large pond (see Zone 4), with the material from this used to build a substantial bund immediately to the north-west. This material was present across the majority of the area and was up to 3.5m deep on the western side of the site. The surface of the underlying Thanet Beds sloped upwards from the south-west, from 2.1m aOD to 3.25m aOD.

Zone 6

Zone 6 lay on Thanet Sands, immediately to the north of the Ebbsfleet peninsula and to the south-west of Cottington Hill. The ground sloped gently down from Zone 7 in the north, at 7m aOD, to a shallow depression in the southern half of Zone 6, the lowest point of this being at 4.3m aOD. To the south of the depression the ground rose quite sharply to the south-west to 6.2m aOD, with a summit in the wooded area of Ebbsfleet Hill immediately to the north of Ebbsfleet Farm.

Previous investigations to the west of the zone in 1990 (Perkins 1999), and to the east in 1990 and 2005 (Perkins 1999; Andrews *et al* 2009), demonstrated the uniquely rich potential of Zone 6. This included an apparently stratified sequence of settlement-related deposits which spanned the Early–Middle Iron Age to the mid–late Roman periods. The stone footings of two Roman buildings were recorded, on either side of Zone 6, and a sequence of substantial ditches of Late Iron Age–early Roman date were probably associated with those recorded to the south in areas adjacent to Zone 4 (see above).

In addition to the main excavation area, a pipe trench along the eastern edge of the southern part of Zone 6 and the northern part of Zone 5 was subject to a targeted watching brief. A narrow strip along the verge bordering Ebbsfleet Lane at the north end of Zone 6 was excavated after the completion of archaeological work within the remainder of the zone, but the section of Ebbsfleet Lane which separates Zones 6 and 7 has been retained and has been buried *in situ* as part of the EKA2 construction works, with no disturbance to the underlying archaeological deposits.

Excavation was undertaken in two stages owing to the presence of what initially was believed to be a midden, covering an area in the central southern part of the zone. However, the hand excavation of a series of test pits through this deposit showed it to be a layer of 'dark earth' (170028), and subsequent analysis indicated that the deposit comprised a mixture of colluvium, organic and other remains which had accumulated in what was the lowest part of the site and been reworked through ploughing in the post-Roman period (Macphail and Crowther, Chap 20, Volume 2). Following the test-pit investigation, and the closure of a public footpath crossing this area, the 'dark earth', along with a layer of colluvium (170010) which partly overlay it on the southern slope of Ebbsfleet Hill, was removed by machine in carefully controlled spits, with metalwork and other significant finds (spanning the Late Bronze Age to medieval periods) being 3D-recorded. Below the 'dark earth' were features of Early Neolithic–late Roman date.

During the latter stages of excavation carefully controlled machining of some deposits and larger features (eg, wells and the ditches at the northern end of the site) was undertaken following the completion of hand excavation. This then allowed further and more extensive excavation and recording of these and other features which had previously been obscured by spreads of later material and colluvial deposits.

The feature density recorded over much of Zone 6 decreased markedly at the extreme north end of the zone and also in the southern part of the zone. The dramatic and sharply-defined fall-off of Iron Age and Roman features in the south coincides with a field boundary indicated on the 1st edition Ordnance Survey map of the area; this field boundary is probably a fossilised medieval (and potentially earlier) land division.

Zones 7–8

Zone 7 lay to the north-east of Zone 6 and occupied a gentle to moderate slope on the south-west side of Cottington Hill. The Thanet Beds here slope upwards from 7m aOD at the south end adjacent to Ebbsfleet Lane to 12m in the north on Cottington Hill.

The feature density recorded over much of Zone 6 decreased dramatically at the extreme north end of that zone and this is reflected in the generally lower density of features recorded in Zone 7, which continued into

Zone 8 approaching the top of Cottington Hill. However, the density was substantially greater than found during earlier pipeline works less than 100m to the east (Andrews *et al* 2009), perhaps reflecting the slightly lower position of the latter and its proximity to what would have been marsh bordering Pegwell Bay until drained for agricultural use.

Zone 8 occupied an area close to the low summit of Cottington Hill, on the brow of the hill and extending down the gentle south-west-facing slope, from 15.25m to 12m aOD. Most of the summit and the north-east-facing slope was not excavated, as this part of the zone was designated for filling for construction of the Cottington Lane overbridge. The features in Zone 8 represent a clear continuation of the pattern seen in Zone 7, with some evidence for the influence of topography. Previous work had identified 'the greatest concentration of surface finds in Thanet' (Perkins 1992a), with much of this being of Early Iron Age date, but also including some Anglo-Saxon and medieval material, along with post-medieval building remains.

Zones 9–10a

Zone 9 lay on the gentle north-east-facing slope of Cottington Hill, extending on to the lower ground at the base of this slope adjacent to the railway. None of this zone was designated for open area excavation as it was to be filled for construction of the Cottington Lane overbridge. However, earlier geotechnical pits had been monitored (Trust for Thanet Archaeology 2006) and limited trenching was undertaken in advance of the installation of services and other works associated with bridge construction. One area was excavated in the north of the zone, and two smaller linear trenches were opened to the south. The Thanet Beds at the south end lay at 10.3m aOD, the lowest area in this part of the route, and all of the trenches remained constantly flooded (and therefore required pumping), although no waterlogged archaeological deposits were encountered, probably due to a fluctuating water-table.

Zones 10 and 10a (considered together as Zone 10 below) were located at the base and on the lower part of the Sevenscore scarp slope on land which rises gently to the north of the railway and Cottington Road, from 11m aOD in the south to 14.4m aOD in the north. Only a relatively narrow strip (up to 20m wide) of Zone 10 was excavated (for a farmer's access track) with the remainder being designated for preservation *in situ*, where the ground level was to be raised as part of the Cottington Road railway overbridge works. Two trenches were, however, excavated at the southern end of the zone in the footprint of the bridge bund and bridge piling works, the latter revealing nothing but disturbed or made ground.

Zone 10a to the west of the southern end of Zone 10 was excavated between late August and early October 2010, at the end of the main programme of EKA2 archaeological works. Zone 10a covered the footprint of a lagoon which has replaced that originally intended for the western part of Zone 9. The route of a temporary road diversion which bisected Zone 10a, and crossed the southern end of Zone 10, was investigated in late April 2011 following the removal of the road.

Archaeological features were cut into Thanet Sands and towards the southern end of the Zone 10 were sealed by a layer of colluvium up to 0.3m thick.

Zones 11–12

Zone 11 lay on the Sevenscore scarp slope which rises at a moderate angle to the north towards the ridge of higher ground occupied by Manston Airport. The zone was sub-divided into Zone 11 (north) and Zone 11 (east), reflecting the northern and eastern arms respectively of this T-shaped area. The land within this area rises from 14.5m aOD in the south to 28m aOD in the north of Zone 11 (north), but within Zone 11 (east) it remains fairly level at 15m aOD.

Colluvial soil covered virtually the entire area to a depth of up to 0.3m, and because of the need to strip and store this material within the zone, a somewhat piecemeal approach to the excavation was adopted. Furthermore, due to several natural, albeit localised, undulations in the underlying Thanet Sands geology, additional machining was required in the central part of Zone 11 (north) to provide a coherent plan of the archaeological features. A buried electricity cable ran down the eastern edge of Zone 11 (north) and constrained excavation in this area.

Overall, little background information was available from the very limited archaeological work previously undertaken in the immediate vicinity of Zones 9, 10 and, particularly, Zone 11.

Zone 12 continued eastwards from Zone 11 (east) across the scarp slope of Sevenscore which rises gently to the north towards the ridge of higher ground occupied by Manston Airport. The ground also rises from 15.5m at the west end of the zone to 18.8m at the east end close to the railway line and Cliffs End, and beyond this to the promontory in the eastern half of Zone 13 (which lies at 25.9m aOD). There was also a change in geology, from Thanet Sands to Chalk, which was exposed on the higher ground at the east end of the zone. Construction of a tunnel beneath the railway involved the excavation of a substantial cutting in Zone 12 to the west and in Zones 13 and 14 to the east.

As with Zone 11, it was necessary to approach the investigation of Zone 12 in a somewhat piecemeal fashion. This was largely because of the presence of substantial deposits of colluvium (up to 0.35m thick) which covered the Thanet Sands across most of the zone, and which had to be stored within the zone. The situation was further exacerbated by the initial retention of underground and overhead services at the east end of the zone and a public footpath at the west end. In addition to the main area of excavation, work was undertaken in advance of pipe-laying immediately beyond the northern edge of the zone and also extending to the south.

There was little background information from the very limited archaeological work previously undertaken within or in the vicinity of the zone (Trust for Thanet Archaeology 2003; Trust for Thanet Archaeology 2008a;

Andrews *et al* 2009), but excavation revealed an unexpectedly dense and coherent pattern of features spanning the Bronze Age to Roman periods. Features were concentrated in the western half of the area, particularly within a slight dip which extended into Zone 11 (east). The eastern part of the site contained relatively few features.

Cliffs End Spur (Landscape 2)

Zones 13–16

Zone 13 was separated from Zone 12 by a railway line and lay to the east of Foads Lane on a south-west-facing slope rising moderately steeply from 19m aOD in the south-west to 25m aOD in the north-east. The eastern half of the zone was located on more gently sloping ground which forms a slight, south-facing spur or promontory with a maximum height of 25.9m aOD, though the ground then continues to rise gently to the north-west beyond the limits of the zone. Chalk was exposed in the western part of the zone and on the promontory, with Brickearth covering this to the east. From the promontory there are extensive views to the south-east across the Channel to the Continent.

Monitoring of geotechnical pits in the western part of the zone was undertaken in 2008 (Trust for Thanet Archaeology 2008a), and earlier archaeological investigations overlapping with the western end of Zone 13 were carried out during the installation of a gas pipe, revealing a grave, a ditch and three pits, all of probable Iron Age date (Willson 1984). In addition to Iron Age material, Neolithic flints and a Mesolithic 'Thames Pick' have been recovered during fieldwalking in this area (Thanet SMR 171).

Of particular significance are the discoveries made during excavations in 2004–5 at Cliffs End Farm, approximately 250m to the south of Zone 13 (McKinley *et al* forthcoming). These revealed six ring-ditches, three enclosures, and a unique mortuary feature, together spanning the Early Bronze Age to Early Iron Age, as well as a Saxon cemetery and a large number of pits, some rich in marine shell, spanning the 6th–8th centuries AD. The high archaeological potential of Zone 13 was further confirmed by crop and soil marks visible on aerial photographs, indicating a large ring-ditch apparently overlain by a substantial trapezoidal enclosure, features subsequently investigated during the EKA2 excavation.

Zone 14 lay to the east of Zone 13, its western end at 25.5m aOD sited on the same promontory upon which the cropmarks of the trapezoidal enclosure and the large ring-ditch had been recorded. To the east the land falls away gently (where Brickearth overlies the Chalk) and then rises eastwards up a south-west-facing slope of another promontory which forms the western side of the Hollins Bottom dry valley. Here, at the north-east end of the zone, Chalk was exposed and the land surface lay at 30.6m aOD.

Subsoil covered the Brickearth over much of the slightly lower lying central part of the zone to a depth of up to 0.3m and, because of the need to strip and store this material within the zone, a somewhat piecemeal approach to the excavation was adopted in this part of the site. Furthermore, it was apparent that some evidence of largely disturbed (by ploughing) feature fills survived within the lower part of the subsoil, particularly where these contained large quantities of oyster shell or where stone hearths were present, and this necessitated a staged approach to the stripping and excavation where such features occurred.

Earlier investigations comprised the monitoring of six geotechnical test pits in 2008 which recorded several archaeological features cutting into Upper Chalk or Brickearth deposits and a scatter of finds of various periods (Trust for Thanet Archaeology 2008a).

Zone 15 was located on the south and south-east-facing slopes of the west side of a dry valley known as Hollins Bottom. The land generally falls from 31m aOD in the west to 25m aOD in the east. The western part of Zone 15 lies on Upper Chalk while the eastern half, in Hollins Bottom, lies on Brickearth.

No archaeological investigation had taken place in the area of Zone 15. However, previous work in the vicinity had indicated that the area east of Hollins Bottom is particularly rich in archaeological remains. A Neolithic causewayed enclosure occupied Chalk Hill and a possible cursus monument extended south from this towards the Lord of the Manor road junction (Clark *et al* in prep). Numerous cropmarks indicate the presence of further probable Neolithic monuments and Bronze Age barrows in this area, several of which have been excavated at the Lord of the Manor junction (Macpherson Grant 1977; Perkins 1980a–b; Moody 2008).

At least two extensive inhumation cemeteries of Saxon date have been identified from aerial photographs, and numerous Anglo-Saxon graves excavated on the east side of Hollins Bottom, most notably at the site known as Ozengell (a Scheduled Ancient Monument 468962), which lies beneath and extends to the north of the Lord of the Manor junction at the eastern end of Zone 15 (Macpherson Grant 1977; Perkins 1980a–b; Moody 2008).

Zone 16 was the designation assigned to the existing Lord of the Manor roundabout at the east end of Zone 16. This double-roundabout had been constructed in the 1970s, involving a substantial raising of the ground level, thereby preserving *in situ* any further Anglo-Saxon burials relating to the Ozengell cemetery which lay approximately 100m to the north-east. The EKA2 modifications to the roundabout were of a relatively superficial nature and involved no impact on the Scheduled Monument.

Zones 26–28

Zone 26 consisted of a narrow strip (up to 20m wide) along the proposed route of a sewer outfall. This route extended south-eastwards from the west end of Zone 13 (at 21.5m aOD) to Cliffsend Road just east of Cliffs End Cottages, where the route turned north-east along the north side of the road as far as the junction with

Sandwich Road and the northern end of Zone 28 (at 19m aOD).

Cropmark evidence for a large Bronze Age ring-ditch and Iron Age enclosure in Zone 13 to the north and the Bronze Age ring-ditches, enclosures and mortuary feature and Saxon cemetery and pits at Cliffs End Farm a short distance to the south (McKinley *et al* forthcoming) indicated a high potential for the occurrence of significant archaeological features in the zone. Furthermore, the Brickearth which covered this area is known to have potential to contain important Pleistocene deposits, particularly in the vicinity of Pegwell Bay.

An evaluation was undertaken along the length of Zone 26 prior to excavation. This demonstrated that the eastern half of the zone was devoid of archaeological features, though two possible palaeochannels were identified. On the basis of this, colluvium/subsoil was not stripped from the eastern half of the route. However, a watching brief was maintained during excavation of the pipe trench in this area, although this identified no deposits of palaeo-environmental interest.

Zone 27 comprised an easement associated with Zone 28, and was not subject to any construction-related impacts.

Zone 28 was the final section of the relatively narrow route of a sewer outfall pipe which originated in Zone 13, passed through Zone 26, crossed the Sandwich road and then continued downwards along the line of the access road to the former Hoverport site on the coast at Pegwell Bay. The archaeological potential of Zone 28 was generally limited, and this potential was further reduced because the pipe trench was a maximum of 2m wide and the upper part lay within varying depths of road formation and made-ground deposits. Nevertheless, the brickearth at the cliff edge was highlighted as this has the potential to contain important Pleistocene deposits, and such deposits have been recorded in a cliff face exposure a short distance around the coast to the north-east. However, no Pleistocene deposits were identified in a watching brief on this section.

Chalk Ridge (Landscape 1)

Zones 17–25 and 29

Zones 17–25, along with Zone 29 (a new service trench), made up the western part of the EKA2. Commencing at the eastern end, Zone 17 extended up the Sevenscore scarp slope, northwards from Zone 11, as far as the A253, and from here Zones 18 to 24 ran consecutively westwards, parallel and just south of the chalk ridge occupied by Manston Airport, as far as the services at the Minster roundabout where the A253 and B2048 meet. Zone 25, a relatively small area immediately north-east of this roundabout (and within the south-west corner of Manston Airport), was removed from the EKA2 scheme in May 2011. Zone 29 comprised a new service trench approximately 900m long which lay just within the southern boundary of Manston Airport and ran parallel to and approximately 50m north of Zone 20 and the east end of Zone 21.

The highest part of Thanet is the promontory at Telegraph Hill, to the north-west of Zone 24, which lies at approximately 55m aOD. The chalk ridge in Zones 22–24 at the west end of the scheme is at a maximum elevation of 51.7m aOD, and the ground falls gently from here to 44.6m aOD in Zone 18, and then more steeply to the southern end of Zone 17 where it is at 28m aOD. Zones 17–24 all faced south, with extensive views over the former Wantsum Channel.

Chalk is the predominant geological deposit throughout Zones 17–24, generally directly underlying ploughed topsoil or, in some places, subsoil. In Zone 29 the ground surface comprised grass, with some areas of hard-standing. As seen elsewhere in this part of Thanet, the chalk exposed along the ridge of higher ground was cut by a series of parallel, north-south 'stripes' of periglacial origin. In some areas, just below the brow of the chalk ridge, discontinuous areas of Brickearth overlay the Chalk. This was seen particularly along the southern extremities of the Zones 19–21, and in the central part of Zone 21 the Brickearth sloped into a shallow dry valley which was infilled with colluvial deposits.

The archaeological works along the Chalk Ridge were carried out in accordance with the agreed methodology, but in several instances there were constraints which had minor impacts upon the programme and extent of stripping. These constraints included the initial presence of gas and electricity services and associated exclusion zones up to 8m wide running through parts of Zones 18–20, a temporary site compound (at the east end of Zone 18), existing roads (in Zones 20–22), a badger sett (in Zone 21), potentially contaminated deposits in World War II trenches (Zones 18–20) and a change in the proposed location of a new balancing pond (Zone 21).

An additional excavation area, 1.8km long and generally between 12 and 20m wide, was stripped parallel to and approximately 10–15m south of Zones 18, 19, and 20 to accommodate diverted gas services. This area was sub-divided and the individual parts were designated Zones 18a, 19a, and 20a respectively. At the western end of Zone 20 the gas main diversion crossed the zone and the 12m-wide easement was stripped parallel to and 15m north of the zone. This area was also designated Zone 20a, and continued into Zone 21a to the west, where it linked to the existing gas main.

Zone 17 continued northwards from Zone 11, from 28.5m aOD up the gentle to moderate south-facing slope of Sevenscore to the chalk ridge above at 44.6m aOD. Background information highlighted the presence of several infilled chalk quarries and associated features within and either side of Zone 17 (Oxford Archaeology 2003).

Zone 18 lay at 90° to the northern end of Zone 17, and extended to the west along the chalk ridge and south of the A253, at an average height of 45m aOD. Background information highlighted no significant

potential for Zone 18, but noted a focus of Iron Age and Roman features to the west in Zone 19 (see below).

Zone 19 extended between Zones 18 and 20, at heights of between 46.5m and 48.5m aOD, with Zone 19a lying south of the main excavation area. Earlier excavations during the installation of the twin gas pipes along the middle of this zone revealed a significant concentration of Iron Age and Roman features, as well as cemeteries of Roman and Anglo-Saxon date, all in the central part of the zone (Perkins 1985).

Zone 20 lay between Zones 19 and 21, at a height of 48m aOD (slightly lower than Zone 19). Earlier excavations during the installation of twin gas pipes along the middle and northern part of Zone 20 revealed a significant concentration of Roman features (Perkins 1985). These indicated a settlement towards the western end of the zone, probably focused on the postulated junction of a trackway extending to the south-east towards Cottington (and the Roman settlement in Zones 10/10a) and the presumed course of *Dunstrete*, a medieval route with probable Roman or earlier origins which ran east-west along the ridge to the north.

Zone 21 extended either side of Wayborough Hill, at a height of 50m aOD. The background information indicated a moderate level of archaeological potential, largely based on cropmark evidence, which suggested the presence of an extensive prehistoric landscape (Oxford Archaeology 2003; Moody 2008; Perkins 2010). This included ring-ditches within the zone as well as a substantial sub-rectangular enclosure (Scheduled Ancient Monument (Kent 262)) of likely Bronze Age or Iron Age date immediately to the south of the zone.

A substantial, shallow dry valley ran north-south across the central area of the east half of Zone 21, becoming wider and deeper to the south but not extending as far north as Zone 21a. This and a large shallow, hollow to the west were sampled for environmental data, though no buried soils were evident within either and the dry valley appeared to be filled entirely with colluvial deposits.

Zone 22 lay between Zones 21 and 23, at a height of 51.7m aOD. Features in the western half of the zone were wholly or partly investigated as part of the EKA2 Community Excavation undertaken in May and June 2010.

Background information again indicated a moderate level of archaeological potential largely based on cropmark evidence, which suggested the presence of an extensive prehistoric landscape (Oxford Archaeology 2003; Moody 2008; Perkins 2010). Features within this landscape included ring-ditches as well as an oval enclosure of possible Beaker date a short distance to the south, the latter the subject of earlier evaluation (Boast and Gibson 2000). Two small pits found close to the southern edge of the zone during this earlier evaluation were assigned a Neolithic date, though the work in 2010 identified no Neolithic features in this area.

Zone 23 extended between Zones 22 and 24, at a maximum height of 50.5m aOD, with some Brickearth overlying the chalk in the south-west corner of the zone. Background information based on cropmark and excavated evidence suggested that there was high potential for the occurrence of significant archaeological features in this zone, with the presence of an extensive prehistoric landscape including several ring-ditches (Oxford Archaeology 2003; Bennett *et al* 2008; Moody 2008; Perkins 2010). One of these ring-ditches, within Zone 23, had been the subject of limited earlier excavation undertaken in advance of the construction of the Minster Services immediately to the south-west (Canterbury Archaeological Trust 2004; Gollop and Mason 2006). These investigations also revealed an important Middle and Late Iron Age site as well as a group of Roman burials in the area now occupied by the new services. In addition, documentary evidence pointed to the likely presence of remains related to the Thanet Union Workhouse, shown on the 1st edition OS maps.

Zone 24 lay at the western end of the EKA2 route, with the ground surface here at 47m aOD. Background information indicated a similarly high potential to that in Zone 23 (see above). However, the EKA2 excavations indicated that the late prehistoric and Roman focus of activity only extended a short distance north into Zone 24, though more recent excavation (undertaken by Museum of London Archaeology) to the south of the Minster Services excavations have confirmed a continuation of the Iron Age and Roman-British activity there.

Zone 29 was an addition to the original programme of archaeological investigations and lay entirely within the southern boundary of Manston Airport, north of the A253 and parallel to Zone 20 and the eastern end of Zone 21. The work comprised a targeted watching brief on an approximately 900m long, 1m-wide trench dug for an electricity diversion related to the EKA construction works.

Radiocarbon dating

by Alistair J Barclay and Chris J Stevens

Introduction

Fifty-six samples were submitted to the Scottish Universities Environmental Research Centre (SUERC) from selected prehistoric, Roman and Anglo-Saxon features to try and address a number of research aims regarding the site. Seven dates are on samples of animal bone, mainly articulated, and 42 are on samples of human bone mostly from inhumation and cremation burials, five are on charred plant remains and two are on charred food residue on pottery.

Project aims

The radiocarbon dating strategy had two main aims:

- To confirm the date of otherwise unphased deposits (eg, human and animal bone), to confirm the date of material thought to be contemporaneous with the

associated feature (so not intrusive or redeposited) and to provide direct dates for pottery by targeting charred food residues;

- To provide more precise dates (ie, within a century) for selected features including a Neolithic pit (191086) with an associated pottery group and a complex of intercutting ditched boundaries (1384 and 3131) of Late Iron Age date. To compare these age estimates with other sites of relevant interest.

Methods, pretreatment, measurement and calibration

The radiocarbon date for each selected sample is quoted in the tables (see Chaps 2–5) in accordance with the international standard known as the Trondheim convention (Stuiver and Kra 1986). They are conventional radiocarbon ages (Stuiver and Polach 1977). All have been calculated using the calibration curve of Reimer *et al* (2004) and the computer program OxCal (v4.1) (Bronk Ramsey 1995; 1998; 2001; 2009). The calibrated date ranges cited in the text are those for 95% confidence. They are quoted in the form recommended by Mook (1986), with the end points rounded outwards to 10 years for errors >25 years. The ranges in plain type in the radiocarbon tables have been calculated according to the maximum intercept method (Stuiver and Reimer 1986). All other ranges are derived from the probability method (Stuiver and Reimer 1993).

Ito achieve more precise dates the methods adopted follow the standard Bayesian approach to chronological modelling as outlined by Bayliss and Bronk Ramsey (2004), a heuristic procedure that starts by defining a problem and involves the building of simulation models to inform sample selection. Sample results will determine whether the initial model fits expectation, or needs modification or further results.

In two cases (pit 191086 and ditches 1384 and 3131) a Bayesian approach has been adopted for the interpretation of the chronology (Buck *et al* 1996; Bayliss *et al* 2007). Although the simple calibrated dates are accurate estimates of the dates of the samples, it is the dates of the archaeological events, which are represented by those samples, which are of interest, as is the chronology of the selected features and their associated activity. The dates of this activity can be estimated not only using the absolute dating information from the radiocarbon measurements, but also by using the stratigraphic relationships between samples. The OxCal program provides the methodology to combine these different types of information explicitly, to produce realistic estimates of the dates. However, the *posterior density estimates* produced by this modelling are not absolute. They are interpretative *estimates*, which can and will change as further data become available and as other researchers choose to model the existing data from different perspectives. They are quoted in *italics*.

The technique used is a form of Markov Chain Monte Carlo sampling, and has been applied using the program OxCal v4.1 (http://c14.arch.ox.ac.uk/). Details of the algorithms employed by this program are available from the on-line manual or in Bronk Ramsey (1995; 1998; 2001; 2009). The algorithms used in the models described below can be derived from the structures shown in the figures in Chaps 2–5.

The samples were pretreated as described by Stenhouse and Baxter (1983), graphitised using methods described by Vandeputte *et al* (1996), and dated by AMS as described by Xu *et al* (2004) and Freeman *et al* (2007).

Chapter 2

The First Settlers: Early Prehistoric Occupation and Burial

by A P Fitzpatrick, Kate Brady, Oliver Good, Matt Leivers, John Powell and Gerry Thacker

The principal sites

Palaeolithic and Mesolithic (970,000–4000 BC)

Very little evidence for activity in the Palaeolithic or Mesolithic was found along the route of the scheme, and no Pleistocene deposits were encountered in the deep trenching undertaken in Zones 26 and 28, close to the deposits exposed in the cliff sections a short distance to the east around Pegwell Bay. The earliest find is a single Palaeolithic flake that came from the Chalk ridge in Zone 22, not far from Telegraph Hill where a hand axe has been found previously. The hill is the highest point on Thanet and it would have been an even more prominent landmark before Britain was separated from the Continent. Only a single flint could be attributed to the Late Upper Palaeolithic or Early Mesolithic; this is a double burin found in ring-ditch 134096 in Zone 13 which, while not as high as Telegraph Hill, is also a prominent location locally, overlooking what is now Pegwell Bay.

There are slightly more finds from the Mesolithic, and most came from the low-lying ground of the Ebbsfleet peninsula, with a single possible tranchet axe flake from the higher ground of Sevenscore. Most of the finds were residual in later contexts. A bladelet core was found in a medieval ditch (172024) on the highest point of Zone 3 and further north in Zone 6 an obliquely blunted point, a bladelet core and debitage were found in tree-throw hole 176167 along with a very much larger group of Early Neolithic material. A second microlith, a straight backed point, was found in Iron Age ditch 249101, and a tranchet axe (ON 3978) was found in Roman pit 132098. Still on the Ebbsfleet peninsula, but over 250m further to the north in Zone 7, a possible tanged/backed microlith was found in Late Bronze Age pit 179117, while a possible tranchet axe sharpening flake came from Iron Age posthole 211145 in Zone 11.

None of this small number of finds can be closely dated but they suggest that Mesolithic activity favoured what are now the lower lands of the Ebbsfleet peninsula and, what are now the Minster Marshes. Palaeolithic and Mesolithic finds were also rare on the Thanet Earth excavations on the higher ground near Minster (Rady 2010, 1). In the Early Mesolithic, before rising sea levels finally made Britain an island, the Ebbsfleet peninsula would have been slightly higher ground and the Minster Marshes would have been a valley whose streams and river(s) discharged into a sea that was still several kilometres to the east. The main foci of earlier Mesolithic activity on Thanet may well have been in this and other valleys (*cf* Moody 2008, 59) and on the contemporary coast. Lastly, the undated pits found beneath two Early Bronze Age barrows in Zone 23 should be mentioned here (see Figs 2.18–9). The pits do not appear to be natural features, even if much of their infilling is, and although they contained a few flints possibly or probably of Neolithic date, it is possible that they were dug in the Mesolithic (*cf* Allen and Gardiner 2002).

Early Neolithic (4000–3350 BC)

Early Neolithic activity was well-represented in the scheme. Groups of pits that may indicate nearby settlement were found in Zones 6 and 14, and a number of other isolated pits were also recorded, particularly on Sevenscore (in Zone 11). Flint objects that were often made on material from the local outcrops of the Bullhead Beds were residual finds in later features, again primarily on Sevenscore.

Zone 6

Two discrete areas of subsoil (170051) filling shallow hollows in the surface of the natural were present towards the centre of the zone, and consisted of fairly large (up to 25m by 25m) and slightly irregular deposits of pale brown silty clay, with depths of between 0.1m and 0.15m (Figs 2.1–2). The subsoil deposits contained a moderate number of struck flints in fresh condition, most recovered from the surface of the deposits, the majority of which utilized Bullhead flint and exhibited technology consistent with an Early Neolithic date, though at least one piece is more likely to be Late Bronze Age. A further small patch of similar soil (178179), situated between the two areas of 170051, is potentially of the same date.

An elongated tree-throw hole (176167) lay to the south-east of the northern patch of soil 170051. A cluster of struck Bullhead flint was present within the southern end of the feature and consisted of 550 pieces of flaking waste and 367 pieces of microdebitage, also in mint condition and evidently *in situ* knapping waste of probable Early Neolithic date.

Artefacts were concentrated within a 0.15m² area at the south end of tree-throw hole 176167 and extended to the edge of the feature, suggesting that the upper parts of the assemblage had been truncated, possibly by ploughing. The recovery of the objects from approximately four spits, each 20mm thick, demonstrated that there had been vertical movement of material through the fill.

The flaking waste contained the output of two distinct 'industrial' processes; core tool production and flake and blade production. The core tool production was represented by at least 70, soft-hammer struck, core tool thinning flakes which accounted for 13% of the total flake and blade component.

Flakes and blades derived from core trimming accounted for the remaining 87% of the flakes and blades, of which blades accounted for 13% of the total, indicating that blades were a significant product of debitage.

There was a large quantity of broken material and very few retouched pieces, and cores were also under-represented. This further confirms the 'industrial' nature of the assemblage, which is discussed in more detail in Volume 2 (Harding, Chap 5).

Towards the south of the zone, at the base of the slope of Ebbsfleet Hill, a number of pits which contained struck flint and Early Neolithic pottery were revealed

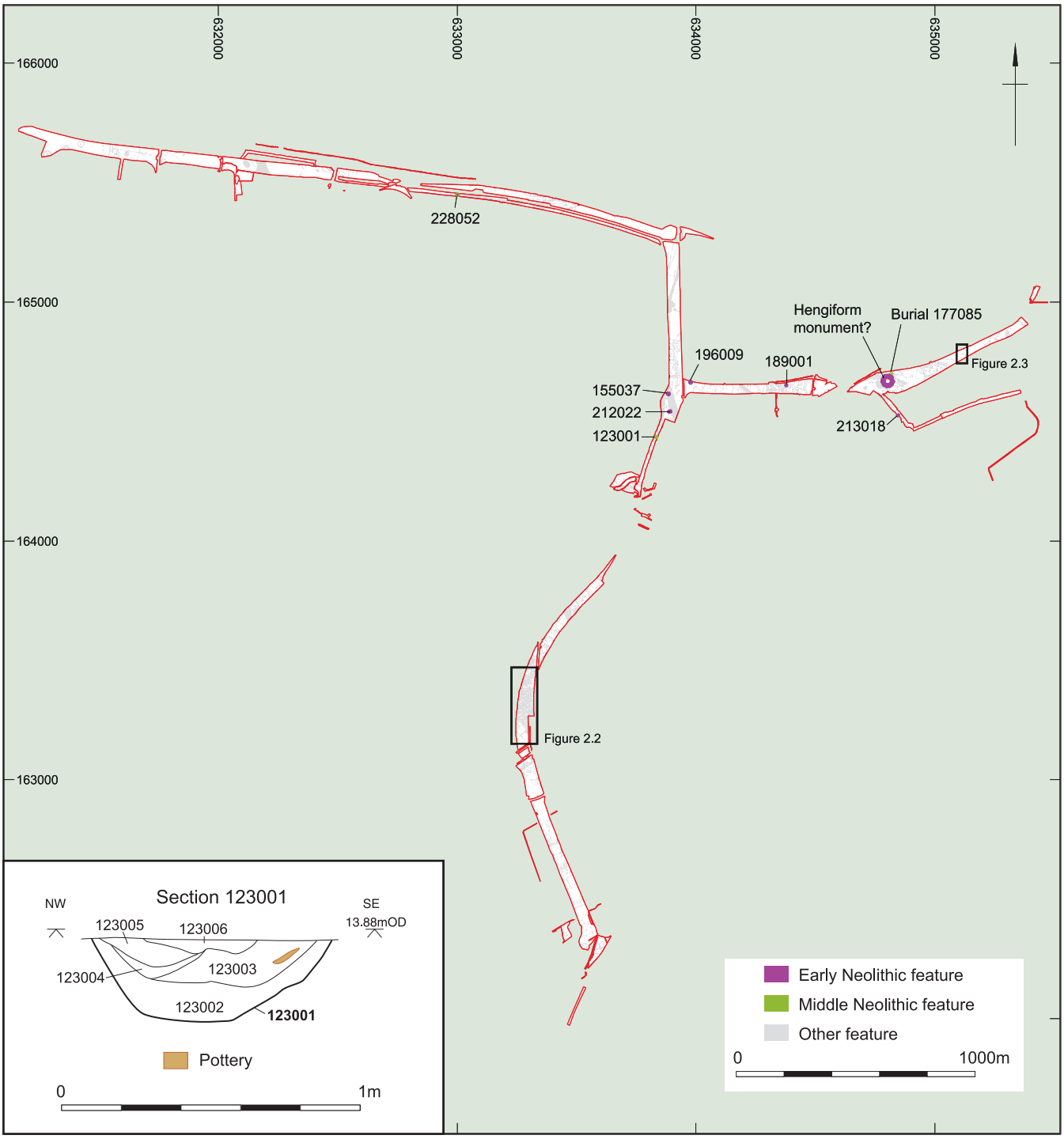


Fig 2.1 Overall plan of Neolithic features along EKA2 route, with section of Middle Neolithic pit 123001 (Zone 10)

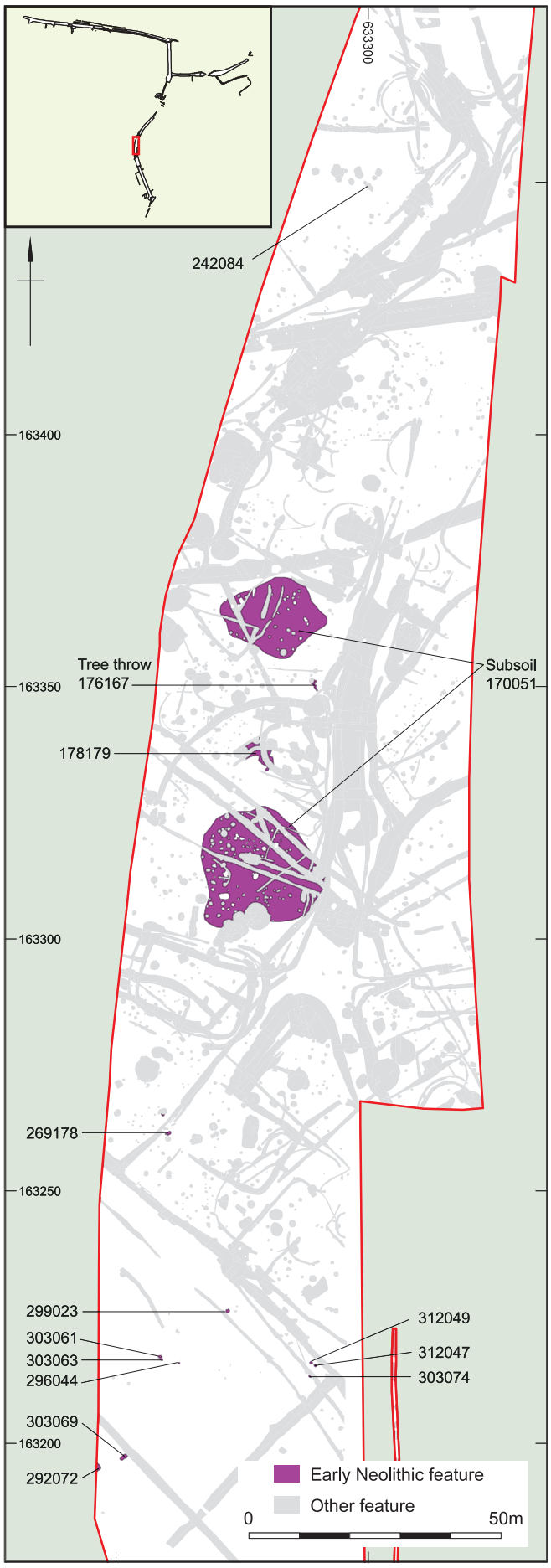


Fig 2.2 Plan of Early Neolithic pits and other features in Zone 6

when colluvial layer 170010 had been removed. Of these pits, the majority (312047, 312049, 303074, 296044, 303061 and 303063) were sub-circular with fairly flat bases, a single fill, and a remaining depth of less than 0.2m. Pit 299023 to the centre south of the zone had a diameter of 0.85m and a depth of 0.26m and contained 78 sherds of pottery, while pit 297072, which extended beyond the western limit of excavation, had the greatest remaining depth (0.56m). Pits 269178 and 303069 were more elongated, the latter measuring 1.65m long by 0.74m wide and 0.18m deep, though the three pottery sherds from this feature may be residual. The function of the pits is unclear, but may relate to temporary settlement (given the presence of pottery in nearly all the features), with flint knapping being undertaken in those areas to the north. Identifiable plant remains from the pits are characteristically few, but included hazelnut shell fragments and a few emmer-type cereal grains and chaff. Evidence for tree clearance may be provided by the presence of a polished stone axe (ON 3917) within an otherwise undated tree-throw hole (242084) situated towards the north of the zone, with a large fragment of a second axe (ON 3233) from the area of flint knapping. A Cornish Group 1 Greenstone axe (ON 866), perhaps of Late Neolithic rather than Early Neolithic date, also came from the northern half of the zone, from an Iron Age ring gully and possibly a curated object, and an axe rough out (ON 696) was residual in an Iron Age ditch at the extreme northern end.

Zone 11

A large palaeochannel (190425) crossed the southern end of Zone 11 (north) in a NNW-SSE direction. The channel measured 36m across and up to 2.4m deep at the centre, and was cut by features of Late Iron Age, and potentially as early as Neolithic, date. A machine dug section was cleaned back and recorded and a single pottery sherd of Late Iron Age or Early Roman date was recovered from the upper fill. Environmental samples from the generally clean and homogeneous fills were disappointing, however, with intrusive modern weed seeds and only small flecks of charcoal present.

Pit 155037, within the palaeochannel, contained two Bullhead flint cores and a snapped blade of Neolithic date, and although four sherds of Roman pottery were recovered these may have derived from a posthole that cut the pit. If the pit does date to the Neolithic then it would give the clearest indication of the date of infilling of the channel.

A flint bifacial axe with a plano-convex cross section was recovered from a feature interpreted as a tree-throw hole (196009) towards the western end of Zone 11 (east). The flint was light grey in colour, and unlikely to be local. The tree-throw hole was cut by a ditch (196010) of probable prehistoric date.

On the west side of the palaeochannel within Zone 11 (north) a large shallow pit (212022) contained 86 pieces of worked Bullhead flint of likely Early Neolithic date. The pit, which measured 3.78m by 2.9m, was ovoid in shape with a concave profile and had a depth of 0.5m. The upper fill (212025) contained flint blades, flakes,

cores, a scraper and 55 chips, the presence of which is likely to indicate the contemporaneity of the assemblage and the pit. Three sherds of pottery from the same fill were dated as Anglo-Saxon, but seem certain to be intrusive.

Zone 12

Neolithic activity in Zone 12 was represented by a small assemblage of residual finds comprising three sherds of Early Neolithic pottery and a variety of struck flint including several scrapers and a number of broken blades and flakes. A notable assemblage came from Late Iron Age pit 189001 which was small but contained six blades, four flakes, one broken blade, one scraper and a broken core all dated to the Neolithic period. The finds confirm that there was some Early Neolithic activity within the surrounding area, possibly on the higher ground to the north-east.

Zone 14

A group of 10 bowl-shaped pits (136075, 173041, 186035, 186037, 191081, 191083, 191086, 191093, 191095 and 191179) within the central part of Zone 14 contained struck flint and Early Neolithic pottery (Fig 2.3). Most were small (0.5–0.7m in diameter) and with a single fill (in many instances probably due to heavy truncation, as few were over 0.30m deep). Larger examples (191083, 191086, 191093 and 191095) approximated to 1m in diameter and some had more than one fill (191086 had two; 191093 had three). Features with more than one fill contained ceramics throughout the stratigraphic sequence, indicating the possibility that comparable material had been present higher up in the other seven features with ceramics, and in similar truncated features without datable finds.

The ceramics are decorated and shouldered rather than carinated, indicating a date between the 37th and 34th centuries BC. Radiocarbon dates on charred flax seeds, two emmer grains and hazelnut shell from one pit (191086) confirmed this dating, 3650–3380 cal BC (4750±35 BP: SUERC-40742; 4775±35 BP: SUERC-40743; 4730±35 BP: SUERC-40744, see Table 2.3). Forms include heavy hemispherical bowls, shouldered bowls, and two vessels with angular carinations. Rims are rounded or flattened and upright, sometimes slightly pulled down internally, externally expanded and everted. A single flat, horizontal, crescentic lug handle was recovered; as well as a vessel with long oval lugs on the shoulder. Surface treatments, such as applied slips, wiping, smoothing and burnishing, were recorded. Decoration includes diagonal lines on rim tops and vertical tooling in necks; one rim has incised zig-zags. Closely-spaced bone and other dot impressions on external surfaces are quite common, carinations have diagonal lines above (and in one instance below) the angle, and various other incised or tooled lines are present. The vessel with shoulder lugs has alternate panels of dot impression and finger fluting above the shoulder and panels of dots below.

Although there were no between-feature joins, sherds of a lugged vessel in pits 173041 and 191093 are similar enough to derive from a single pot, and a vessel in pit 186037 in a distinctive buff-orange fired fabric with an incised zig-zag is also present in pit 191179. Forty-nine of the 270 sherds in pit 191086 came from a large open shouldered bowl. The condition of different parts of this vessel varies, suggesting a complex depositional history.

Other types of material were limited to flint and fired clay (one piece in 191083; 26 in 191093), the latter small and undiagnostic but probably fragments of oven or hearth structure. The flint was typified either by very small numbers of pieces (no more than seven in 173041, 186035, 191095) or larger quantities of apparent knapping waste and tools (cores and fragments, blades, bladelets, flakes, microdebitage and microdenticulates). Pits containing large assemblages included 191086 (66 pieces, an axe-thinning flake and a scraper), 191093 (64 pieces, including rejuvenation tablets), and 191179 (25 pieces).

A further 12 pits (166055, 166057, 173039, 173040, 173042, 191078, 191177, 191181, 191183, 191191, 191193 and 191195) had similar dimensions, shapes and fills, and may consequently be contemporary,

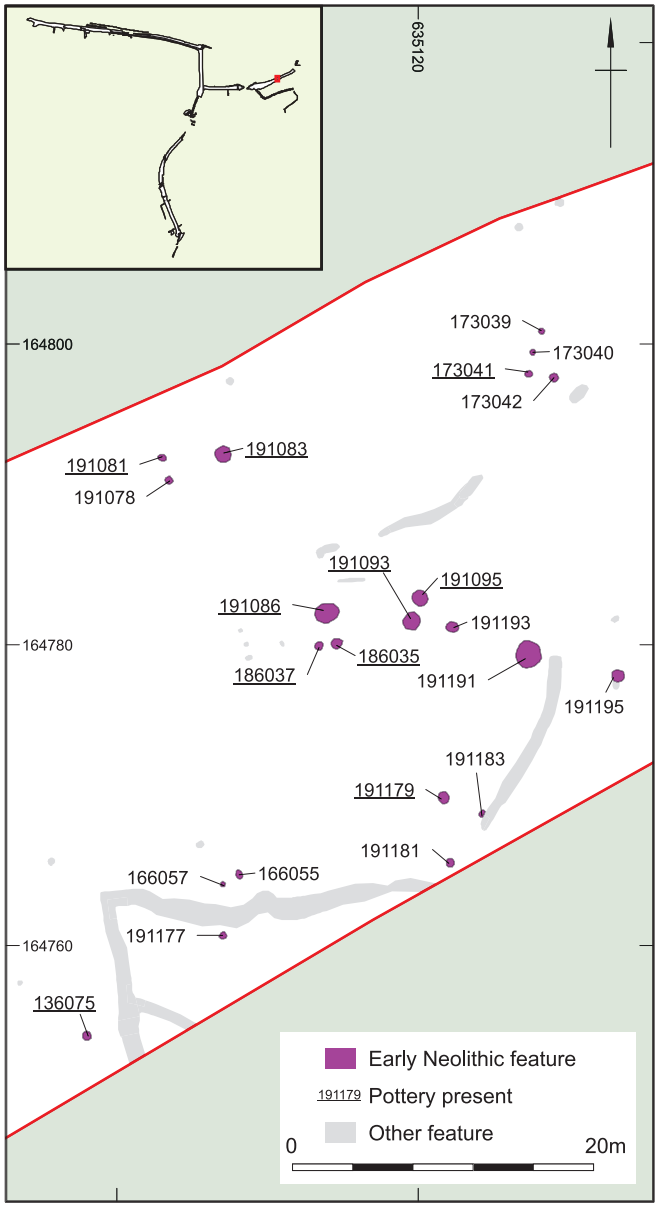


Fig 2.3 Plan of Early Neolithic pits in Zone 14

although none contained sufficient artefactual material to confirm this.

The small environmental assemblages from the pits include hazelnut shell fragments, emmer-type wheat, chaff, and flax seeds and stems, confirmed as Early Neolithic by radiocarbon dating. These provide evidence for agricultural crops and gathered food resource.

Zone 26

A single pit (213018) contained six sherds of decorated Early Neolithic pottery along with small numbers of flint flakes, blades and microdebitage. Two other undated neighbouring pits may have been contemporary (40316 and 213021), although only their proximity suggests this. No other Early Neolithic features were encountered in the zone, the nearest contemporary material being the pit group in Zone 14, 370m to the north-east (although a similarly small quantity of Early Neolithic pottery was recovered 200m to the south-west at Cliffs End Farm (McKinley *et al* forthcoming).

Discussion: the Early Neolithic occupation

Zone 6

In Zone 6 (Fig 2.1) two areas of silty clay in the centre of the zone (170051) contained quantities of Early Neolithic flint in good condition and a nearby tree-throw hole (176167) contained a large quantity of knapping waste. Some unfinished tools were found in the tree throw, including an incomplete leaf-shaped arrowhead, and there were other arrowheads to the north of it.

At the base of Ebbsfleet Hill a number of shallow pits were sealed below colluvium and it seems likely that further pits lie beyond the excavated area. Two groupings are apparent; one of four pits lying close together, and a linear arrangement of five pits. Most of the pits were small and circular but two larger ones (269178 and 303069) were more sub-rectangular. Seven of the pits contained sherds from Early Neolithic decorated shouldered bowls and a further four are attributed to this period by the flint. The flint tools included small numbers of microdenticulates, scrapers and piercers. Emmer wheat and hazelnut shells were found in pits 312047 and 312049, both of which contained pottery, but no animal bone survived.

In the north of the Zone a polished axe with a broken blade (ON 3917) was found in a tree-throw hole (242084) and a rough out (ON 696) was residual in an Iron Age ditch (154172). Other fragments of polished axes were found in later features, including a Cornish Greenstone axe (ON 866) in an Iron Age context (247083). In addition a flint axe was found in the base of the small ring-ditch recorded adjacent to Zone 4 in 1993 (Hearne *et al* 1995).

It seems likely that that the pits in Zone 6 were associated with settlement areas on or in the lee of Ebbsfleet Hill, while the material from the layers of silty clay, which contain a much greater quantity of waste from stone tool preparation, represent working areas. The small quantities of flint from Zone 4, and also on the slightly higher ground in Zone 3, may be related to the occupation(s) in Zone 6. As no flints were found to the south in Zone 5, this might suggest that Ebbsfleet Hill was still largely wooded.

Zone 14

Twenty-two small, shallow pits were found in a cluster in the centre of the zone (Fig 2.3). Nine of these contained pottery and eight also contained worked flint, while four contained worked flint only. The remaining nine contained no finds. None of the pits contained large quantities of flint. Bullhead and weathered surface flint was used and though only one flake core was present, the microdebitage indicates that blanks for flake tools were being prepared. There were few tools but these included microdenticulates, and a single end scraper. Some diagnostic Neolithic types were residual in later features, including one leaf-shaped arrowhead, though of course this could represent a loss in use rather than being a settlement-related find.

Fragments of fired clay with a moulded surface from two of the pits (191083 and 191093) that contained both pottery and flint are probably parts of ovens or hearth structure. While unprepossessing, these fragments are important as they indicate that cooking was undertaken at the site and grains of emmer and possibly spelt, flax, and hazelnut shells were found in samples from three pits.

The pottery is all from decorated shouldered bowls with Whitehawk-style affinities and the modelled date from the three radiocarbon dates on charred plant remains from pit 191086 is *3640–3520 cal BC (95% probability) probably 3640–3570 cal BC (68% probability)* (see Table 2.3 and Vol 2, Barclay and Stevens, Chap 21).

Other finds

The extensive occurrence of objects made of Bullhead flint (Vol 2, Harding, Chap 5) indicates that Early Neolithic activity was widespread and a small number of features, mainly on Sevenscore, may be associated with this. In Zone 8 two sherds of Early Neolithic pottery were residual in Early Bronze Age ring-ditch 273013, and in Zone 10 a small assemblage of flint working debris, including debitage, was found in pit 123001 (Fig 2.1). Other possible Neolithic finds from Zone 10 include a probable sickle with heavy gloss on the edge, which was residual in one of the Iron Age ditches.

Zone 11 was coincident with the outcrop of the Bullhead Beds so it is perhaps unsurprising that pit 212022 contained a large group of Early Neolithic flint including debitage. A second less well-dated pit (155037) may also be Neolithic. A single pit (189001) in Zone 12 might also be of this date (Fig 2.1) and the small quantity of flint in it, which included a scraper, was in fresh condition. A few sherds of Early Neolithic pottery were also found in features of later date in Zone 12.

An isolated pit (213018) in Zone 26 that contained sherds from two pots and a small flint assemblage that included debitage may be related to the settlement in Zone 14, but is closer to Cliffs End Farm where finds of

this date have been made (McKinley *et al* forthcoming).

There was much less evidence for Neolithic activity on the chalk ridge. In Zone 20 an isolated pit 228055 contained a few pieces of flint that may be Early Neolithic in date and in Zone 22 a small undated pit (296008) also contained a few pieces of worked flint of possible Neolithic or Early Bronze Age date and a leaf-shaped arrowhead was found in the zone. In Zone 23 a single sherd of Neolithic pottery was residual in ring-ditch 195004, while a microdenticulate came from the fill of ring-ditch 195007 and a leaf-shaped arrowhead was recovered from buried soil 141094 within ring-ditch 195004. Some of the pits found below two of the Early Bronze Age barrows in Zone 23 contained Neolithic flints but it is uncertain if the pits are of this date. They could be earlier – Mesolithic (see above) – or even Bronze Age.

The local context

Evidence for Early Neolithic occupation in Zones 6 and 14 represent important discoveries, both locally and regionally. The scatters of pits are typical of the evidence for the impermanent settlement at this date. Some finds are associated with cooking; the clay ovens, perhaps hinting at more permanent occupation, the charred remains of wild and cultivated plants, and the pots, while the flint objects include tools and debris from the preparation of flakes. The individual pit groups may represent separate visits to the same locations in different years (Garrow *et al* 2005).

The radiocarbon dates from features in Zone 14 (see Table 2.3) are later than those from pits at Westwood Cross and Ellington School in Ramsgate (Stevens 2011b; Carruthers 2011) and some pits at Thanet Earth that contained Carinated Bowls (Peter Couldrey pers. comm.) will also be earlier. There are also earlier monuments such as the causewayed enclosure at Chalk Hill, Ramsgate (see Barclay and Stevens, below; see Fig 2.24–5) and another enclosure with interrupted ditches is known nearby at Court Stairs (Dyson *et al* 2000; Hammond 2007, 358–67, fig 3; Moody 2008, 65–8, fig 25–6) (Fig 2.4). It is possible that there are other causewayed enclosures nearby. At Chalk Hill a length of interrupted ditch that contained Early Neolithic pottery was found to the east of the excavated enclosure (Healy 2008, 3), and it has also been suggested that the pit in which the well-known inhumation burial at Nethercourt was found (Dunning 1966, 8–11) may be a ditch segment of a causewayed enclosure and that the Middle Neolithic Decorated Bowl that overlies the burial might be unrelated to it (Healy 2008, 3).

Other Early Neolithic monuments on Thanet are less well defined, but at Ramsgate what appears to be a cursus cuts across the Chalk Hill enclosure (Dyson *et al* 2000) and at Broadley Road, Northdown, an undated rectilinear enclosure is very probably an Early Neolithic mortuary enclosure which would have been part of an earthen long barrow (Egging Dinwiddy and Barclay 2009).

A local comparison for the occupation in Zones 6 and 14 comes from Westwood, Broadstairs where a group of 48 pits was found, 23 of which were excavated. Again there were few finds, typically flint, and only four contained identifiable Early Neolithic pottery (Poole and Webley 2008, 77–80, fig 2). In this context the evidence

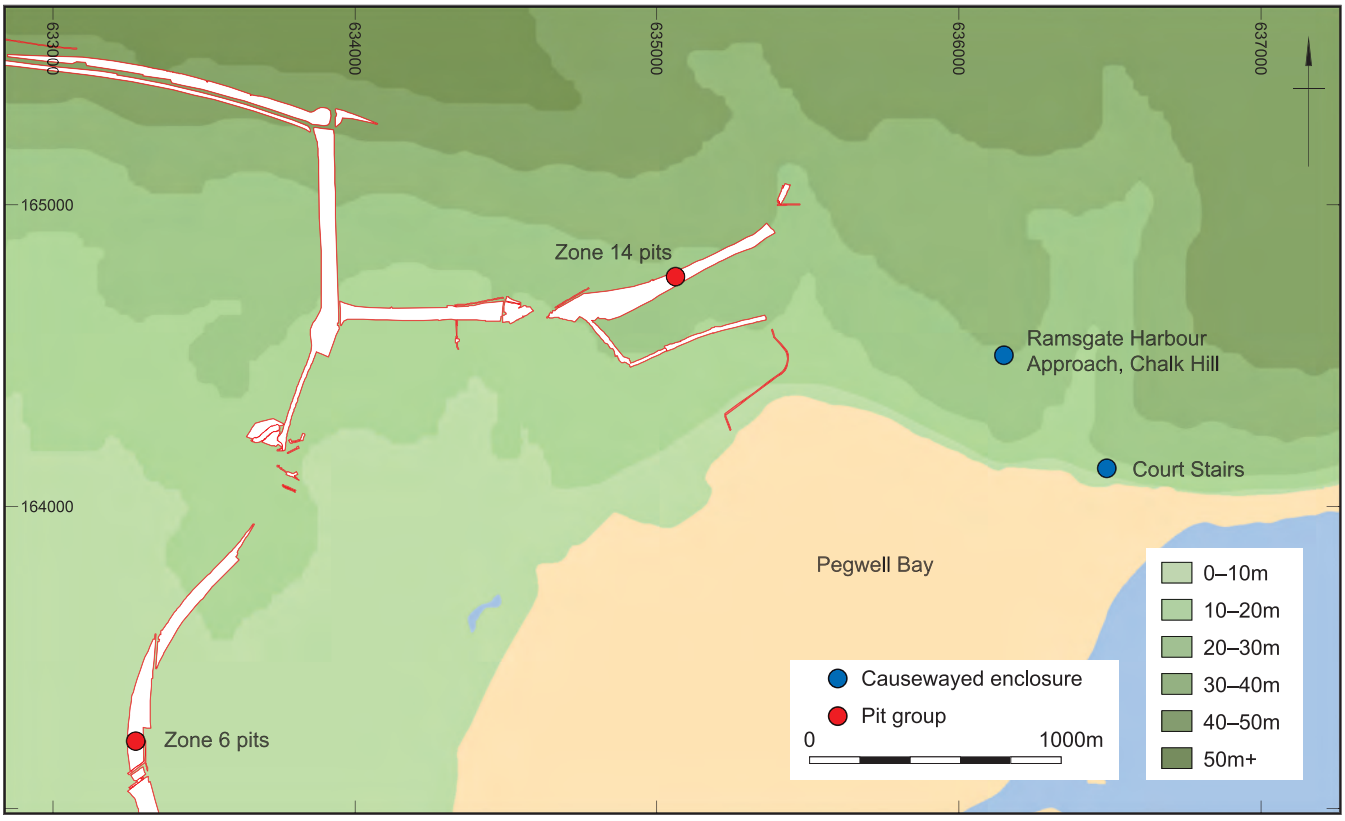


Fig 2.4 Location of Zone 6 and Zone 14 Early Neolithic pits in relation to causewayed enclosures at Chalk Hill and Court Stairs

from Zone 6 for flint working areas at a distance from the clusters of pits is important. Although the fieldwalking survey did not identify any significant surface concentrations of worked flint along the route, including within Zone 6, this evidence was preserved in two shallow hollows and a tree-throw hole. No pits were associated with this activity. Another 'settlement' on Thanet may be indicated by the by the finds from Minnis Bay, Birchington. Here, Early Neolithic pottery, two polished axes and flints including a leaf-shaped arrowhead were found on an old land surface only exposed at low tides (Macpherson-Grant 1969). The presence of emmer and possibly spelt, flax, and hazelnut shells in Zones 6 and 14 is typical of the Early Neolithic and there is a comparable range at Chalk Hill where spelt, barley, a vetch and hazelnut are reported (Hammond 2007) and at Thanet Earth (John Rady pers. comm.).

Several other finds of Early Neolithic pits are now known on Thanet. These include three at Bradstow School, Broadstairs along with a length of a possible curvilinear enclosure ditch (Hart and Boast 2007, 423–4), three from Manston (Bennett *et al* 2008, 11, 46–7, fig 1/26–8), one at Manston Road, Ramsgate (Hutcheson and Andrews 2009, 203, 222), one at Chalk Hill, Ramsgate which contained an Early Neolithic vessel alongside Peterborough Ware (Hearne *et al* 1995, 261, 283–6), the pit from Westwood Cross (Stevens 2010) and the two from Ellington School, Ramsgate (Carruthers 2011) and there is another probable pit at Laundry Road, Minster (Boast and Gibson 2000), immediately south of Zone 22. Pits are known from several locations at Thanet Earth, south of Birchington and although there are no large concentrations, the finds include Carinated Bowls suggesting that the pits represent the earliest occupation yet found on Thanet (Rady 2009, 23). Early Neolithic sherds are also recorded from Anne Close, Birchington. At least some of these seemingly isolated pits and finds may indicate the location of areas of occupation comparable to those in Zones 6 and 14 and at Westwood.

These discoveries are distributed across Thanet and they represent a significant concentration of Early Neolithic finds and although more finds are known from the south-east of the island, this may reflect only where most investigation has taken place.

Middle Neolithic (3350–2850 BC)

Zone 10

A seemingly isolated pit (123001) was uncovered in Zone 10, within Early Bronze Age enclosure 194091. The pit 123001 was ovoid, measured 0.9m by 0.6m with a concave profile, and was approximately 0.15m deep (for location see Fig 2.1). It contained struck flint, pottery of Middle Neolithic date within two of its fills (123003 and 123005), and 4.3g of cremated bone (probably that of an infant, >5 yr.) was recovered from fills 123002 and 123003, most likely representing a cremation-related deposit. The pottery (84 sherds) was in good condition and derived from a minimum of two

Pl 2.1 Middle Neolithic pottery from pit 123001 (Zone 10)

Mortlake-type vessels, one of which was decorated with twisted cord impressions, and the second with fine short incised lines (Pl 2.1). The flint, made on material from the Bullhead bed, included a blade, a flake, microdebitage and two microdenticulates which are characteristic of Early Neolithic technology and as such may be residual. A few sherds of Late Iron Age pottery were also recovered, but are likely to derive from a ditch of the same date (194100) that cut the northern part of the pit. Three broken flint blades and a soft hammer-struck flake with edge retouch were recovered from the southern part of ditch 194091, and may related to the Middle Neolithic activity represented by the pit.

Zone 13

A single inhumation burial (177086) in grave 177085 immediately to the north of ring-ditch 134096 (Barrow 2) returned a radiocarbon determination of 3350–3090 cal BC (4490±30 BP: SUERC-40296, see Table 2.3). No other contemporary features were encountered in

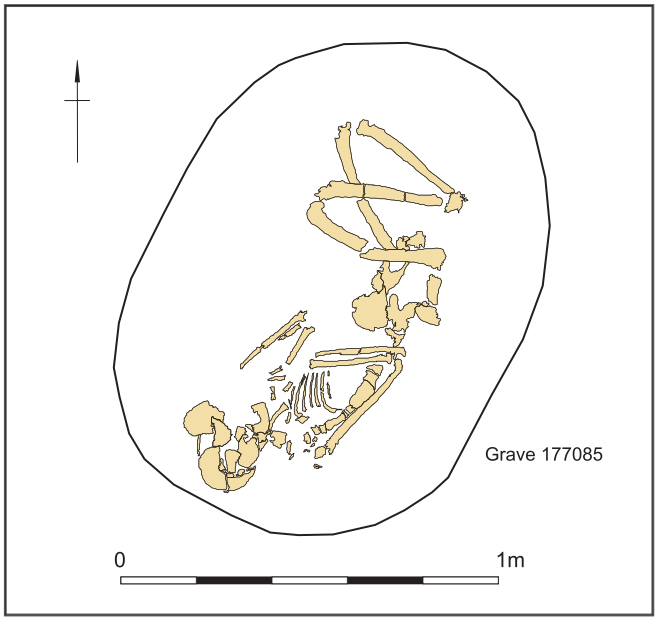


Fig 2.5 Plan of Middle Neolithic grave 177085 (Zone 13)

Zone 13 or any of the adjacent zones, although a chisel arrowhead of probable Middle or Late Neolithic date came from a tertiary fill of ring-ditch 134096, with a similar arrowhead from the Early to Middle Iron Age sunken-featured building (174060) in the same area (see below). Peterborough Ware ceramics only occurred in Zones 10 and 19.

The grave appears to be another instance of Middle Neolithic activity elsewhere represented by a scatter of pits containing pottery which lie along or close to the former shore of Pegwell Bay, from Zone 10 of the EKA2 (see above) as far east as Chalk Hill, Ramsgate.

Grave 177085 (Sk 177086)
Fig 2.5
Grave: SW–NE, sub-rectangular with vertical sides and flat base – 1.34 x 1.00m, 0.29m deep. Mid-greyish brown sandy silt fill, 15% small to medium sub-rounded and sub-angular stones.
Human Remains: Burial is flexed on left hand side. *c* 81% skeletal recovery. Adult *c* 45–65 yr. Male

Zone 20
At the eastern end of Zone 20 was a single Middle Neolithic pit (228052, see Fig 2.1). The pit was sub-circular in shape with steeply sloping sides and a concave base. It measured 0.38m x 0.32m and 0.29m in depth. The main fill was a mid-orangey-brown silty clay which contained 36 sherds (100g) of pottery from a Fengate Ware jar and a few fragments of animal bone. The apparently isolated position of this feature means that it is difficult to suggest its function or place within the Neolithic landscape.

Late Neolithic (2850–2400 BC)

Zone 13
Although there are no features securely dated to the Late Neolithic, there are indications that the original form of ring-ditch 134096 (Barrow 2; see below, Early Bronze Age) may have been a single-entrance hengiform monument. The original cut (134100) survived in only three locations, by virtue of having been slightly deeper, slightly wider, or slightly differently aligned to the later (Early Bronze Age) cut which destroyed most of it. This first phase was present on the north, west and eastern sides of the barrow (see Fig 2.13), and was so closely coincident with the second ditch that it is reasonable to suppose that the two shared the same general alignment and profile. No complete section of 134100 survived, so its dimensions cannot be ascertained, but the most complete section indicated a broad, steep-sided flat-bottomed ditch, approximately 1.2m deep. A diameter comparable with that of the later cut is indicated, in the region of 43m. The surviving fills were entirely sterile. In one location on the eastern side, the deeper cut surviving below the base of the later ditch appears to come to a terminal, suggesting that this first ditch may have been discontinuous (Pl 2.2). Variations in the width of the ditch, especially on the western side, are suggestive of other breaks in the original circuit, perhaps one opposing that indicated on the east side, but conclusive evidence is absent.

The surviving fills of 134100 were entirely sterile, but there are elements among the flint assemblage from the fills of the succeeding Early Bronze Age barrow ditch and from features within the ditch circuit which may indicate Late (and Middle) Neolithic activity. Most of the flint was undiagnostic and poorly stratified, but the assemblage did include chisel arrowheads, one from the ditch and the other from an Early–Middle Iron Age sunken-featured building located in the interior (see Vol 2: Fig 5.2, 16 and 17). Harding (Vol 2, Chap 5) considers that, although not conclusive evidence, these tools 'offer some optimism that the monument may have had Middle/Late Neolithic origins'.

Pl 2.2 Section of ring-ditch 134100 (Barrow 2) showing flat base and possible terminal of earlier ditch of possible Neolithic hengiform monument (Zone 13; view from south)

Discussion: the Middle–Late Neolithic

In contrast to the Early Neolithic, there is much less evidence for the Middle Neolithic and almost none for the Late Neolithic. In Zone 10 two Peterborough Ware bowls were found in pit 123001, one of which was Mortlake-type (Pl 2.1), and in Zone 20 part of a Fengate-type vessel was found along with two unidentifiable animal bones in pit 228052. These finds join the growing list of discoveries from east Thanet which now includes pits at Cliffs End Farm close to Zone 26, Cottington Road (two separate discoveries) and Chalk Hill. Finds from secondary contexts include those from the causewayed enclosure at Chalk Hill and from Manston. There are other finds from Manston and further to the west at Laundry Road, Minster and possibly at Thanet Earth (Cleal 1995; Andrews *et al* 2009, 67; Rady 2009, 23; Leivers, Vol 2, Chap 8).

The unaccompanied burial of an adult male found in grave 177085 in Zone 13 dated to 3350–3090 cal BC (4490±30 BP; SUERC-40296) was an isolated find, though two chisel arrowheads were found in features a short distance away. A very small amount of cremated human bone (4.3g) from a child was also found in pit 123001 in Zone 10, perhaps representing a cremation-related deposit.

It has suggested above that the burial from Nethercourt (Dunning 1966, 8–11) may be Early rather than Middle Neolithic in date and the exact dates of three probably Neolithic burials from Area 7 at Monkton are uncertain. One contained Early Neolithic pottery, a second pottery of possibly Late Neolithic date and the third contained no pottery (Bennett *et al* 2008, 10-11, fig 1/4; 1/19; pl 1/13). Other burials from Mill Lane in Margate, Chilton Farm, Ramsgate and the Chalk Hill causewayed enclosure in Ramsgate are not well dated either (Bennett *et al* 2008, 86–9), but irrespective of their exact date these finds still represent a significant number of Neolithic single burials, although due to radiocarbon dating these are now being identified more frequently (eg, Barclay and Halpin 1999, 275–6). At least some of the other Thanet graves may be contemporary with the isolated pits containing Peterborough Ware that are being discovered regularly.

In contrast, no Late Neolithic pottery was found in the EKA2 and very few flint objects can be attributed to this period. As discussed above, the date of the first phase (134100) of the large ring-ditch in Zone 13 (Barrow 2) (see Figs 2.10 and 2.13) is unknown. A possible ditch terminal (Pl 2.2) presumably for a causeway, an essential element of a henge, has been identified in the eastern part of the ditch and no burials were associated with the first phase of the monument. Although Grooved Ware, which is often associated with henge monuments, is conspicuous by its absence from the Zone, it is actually rare on Thanet and at least some flint objects, such as the two chisel arrowheads residual in Iron Age contexts, are Late Neolithic types. Beaker pottery is also absent. Although the rarity of Late Neolithic finds at the monument might be explicable by the recutting of the ditch (as 134096), hardly any finds of this date were discovered in the extensive excavations around the monument which would suggests that very finds were ever deposited. The ditch of the possible henge recently discovered near Sittingbourne in central Kent was completely recut, probably in the Early Bronze Age (Anon., 2013, 8).

While a Late Neolithic date is possible and this would be consistent with the 'henge-related' barrows of Thanet, the possibility that the first stage of Barrow 2 dates to the Early Bronze Age cannot be excluded and this is discussed further below.

Early Bronze Age (2400–1500 BC)

The Early Bronze Age remains recorded on the EKA2 comprise almost entirely funerary monuments, unsurprising given that the Isle of Thanet is particularly rich in ring-ditches and barrows, with relatively few features that may be settlement-related.

Ten probable Early Bronze Age ring-ditches have been identified along the route of the scheme, with another assigned to the Middle Bronze Age. One other ring-ditch (in Zone 20), though superficially similar in plan, proved on excavation to be shallow and of later Roman date.

Six of the ring-ditches (including the Middle Bronze Age example) lay on the high ground along the Chalk ridge (in Zones 21 and 23) and undoubtedly formed parts of larger groups of barrows, two were sited on a promontory on the Cliffsend spur (in Zone 13, one of these ring-ditches perhaps originating as a Neolithic monument), two were near the crest of Cottington Hill (in Zone 8), and one was constructed on a pronounced high spot (in Zone 3) on the low-lying Ebbsfleet peninsula (see Fig 1.1).

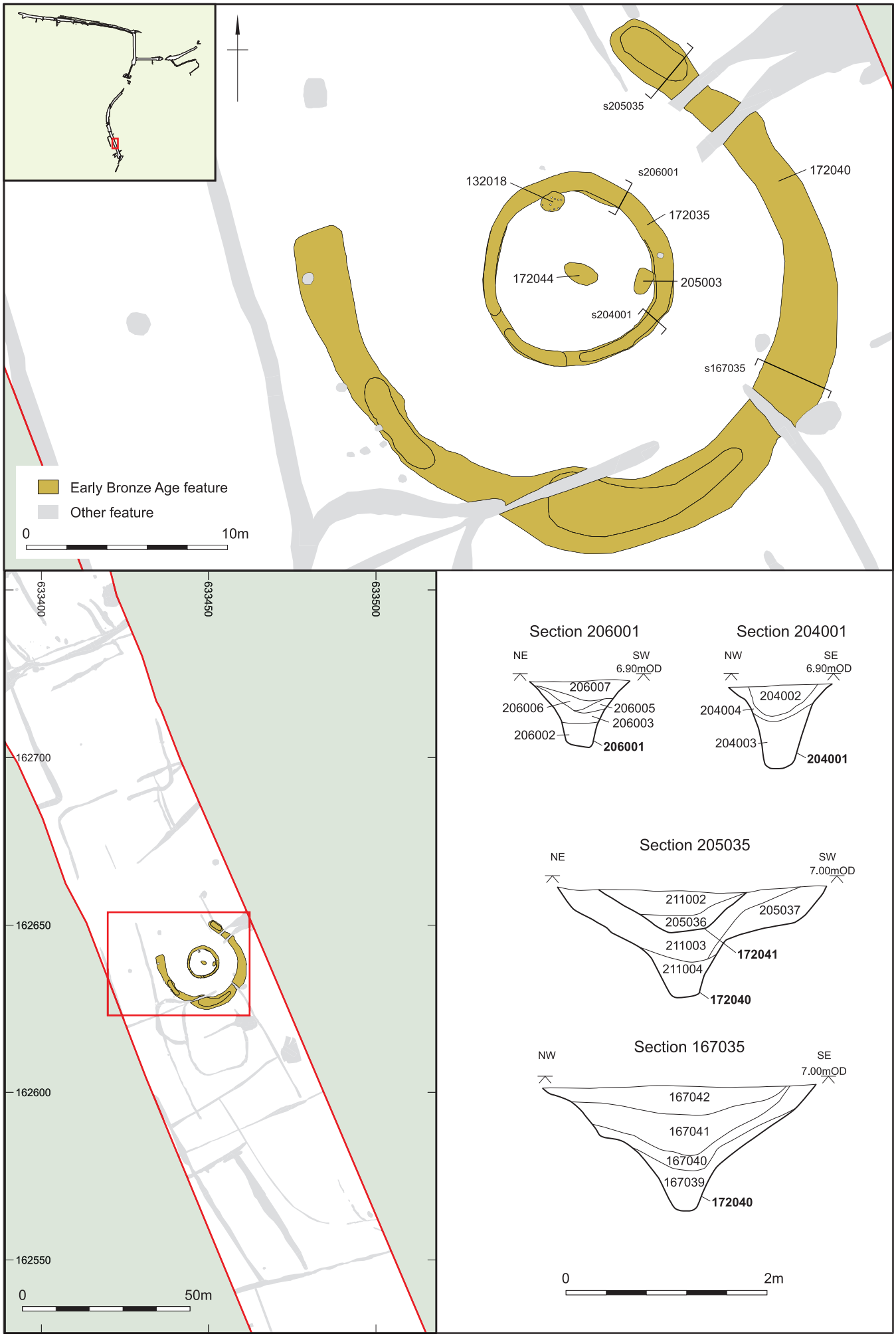
Zone 3 Monument 193165

Early Bronze Age monument 193165 occupied a slight knoll (at 6.9m aOD) on the Ebbsfleet Peninsula (Fig 2.6, Pl 2.3). It comprised an outer penannular ditch which surrounded a small ring-ditch with a shallow pit in the centre. The inner ring-ditch may have been the earlier feature, with the outer penannular ditch added later, but this cannot be demonstrated though both elements are likely to be of Early Bronze Age date.

The inner ditch (172035) was entirely excavated by hand, initially through a series of cross-sections spaced equidistantly around the circumference Approximately 50% of the outer ditch (172040) was hand-excavated, through a series of cross sections and longitudinal sections of the ditch terminals; after recording, the remainder of the fills were removed in spits by carefully controlled machining.

Inner ring-ditch 172035

The inner ring-ditch (172035) had a diameter of approximately 8m, was up to 1m wide and generally 1m deep, with a narrow, steep-sided, U-shaped profile and a fairly flat base (Fig 2.6; Pl 2.4). There was some, not altogether convincing, evidence for a possible


s205035
172040
132018
s206001
172035
172044
205003
s204001
s167035
Early Bronze Age feature
Other feature
0
10m
633400
633450
633500
162700
162650
162600
162550
0
50m
Section 206001
NE
SW
6.90mOD
206007
206006
206005
206003
206002
206001
Section 204001
NW
SE
6.90mOD
204002
204004
204003
204001
Section 205035
NE
SW
7.00mOD
211002
205037
205036
211003
172041
211004
172040
Section 167035
NW
SE
7.00mOD
167042
167041
167040
167039
172040
0
2m

Pl 2.3 Early Bronze Age monument 193165 (Zone 3; view from north-west)

shallow recut (172039), recorded in the majority but not all of the excavated sections. The basal deposits in the first phase (172035) of the inner ring-ditch were derived from erosion of the edges, a process that probably took place fairly rapidly. It is unclear whether any of the deposits derived from a mound, and the fill sequences recorded do not indicate whether there was an internal or external mound or bank. A tiny quantity of Late Neolithic–Early Bronze Age pottery was recorded from a lower fill (204003) on the southern side of the ring-ditch and a small quantity of worked flint (11 pieces) was recovered from the various sections.

After ring-ditch 172035 had largely silted up it appears to have possibly been recut by shallow ditch 172039. The recut was most clear on the south-western side and there is some, slight evidence from the apparent presence or absence of recuts that it may have been segmented. However, this may be a reflection of the formation of different deposits within the top of the ditch rather than deliberate recut events.

An oval pit, 172044, 0.3m deep, was located in the centre of ring-ditch 172039. This contained a single fill, with some worked and burnt flint, but no other finds and no human bone. It remains unclear if pit 172044 was directly related to the ring-ditch, but the central location of the feature suggests that the two features were contemporary. Two further shallow oval pits (132018 and 205003) were recorded within the ring-ditch, but their date and associations are uncertain.

Outer penannular ditch 172040

The outer, penannular ditch 172040 (Fig 2.6; Pl 2.5) had an internal diameter of 20m and a north-west-facing entrance that measured 16m between the two terminals. The ditch had apparently been allowed to silt up naturally and the sequence and nature of the fills provided reasonably clear evidence for an internal bank or mound. This is confirmed by two later, medieval ditches which crossed the southern part of the outer ditch, but became shallower and did not continue (or survive) into the central part of the monument, indicating the probable presence of a bank or mound within the interior at this time. It can be noted that the presence of a few sherds of Roman pottery in the upper fills (see below) indicates that the outer ditch survived as a shallow earthwork then, but that this had become infilled by the medieval period.

There may have been two phases of outer ditch, the latest represented by a possible shallow recut. The earliest phase of the outer ditch had a generally wide, open V-shaped profile that varied between 2m and 3.5m in width and was up to 1.2m deep; however in some

Pl 2.4 Early Bronze Age monument 193165 (Zone 3), section of inner ditch

Pl 2.5 Early Bronze Age monument 193165 (Zone 3), section of outer ditch

Fig 2.6 (opposite) Plan and sections of Early Bronze Age monument 193165 (Zone 3)

sections a more U-shaped profile was recorded. Whereas the eastern terminal (211001) was 0.8m deep and rose sharply to form a rounded butt end, the western terminal (207001) was only 0.65m deep and had a more gently-sloping profile. The difference in depths of the terminals may relate to truncation or erosion of the monument and, furthermore, the ground surface sloped away fairly sharply on the western side of the penannular ditch; this was approximately 0.7m lower than on the east side. The ditch contained up to seven deposits that were the result of natural erosion processes, and in sections on the northern side were fills that probably represent eroded mound material (eg, 205037). The finds assemblage includes very small quantities of pottery, ranging in date from the Bronze Age to the Roman period though the latter, in particular, was only recovered from the upper fills of the ditch on the south-west side; nothing diagnostic came from the basal fills. Worked flint (71 pieces) included scrapers, blades, flakes, core fragments and rejuvenation tablets, all of probable Bronze Age date though some may be Neolithic.

A possible discontinuous recut (172041) of the outer ditch was recorded in several sections and provides potential evidence of a second phase of activity (see section 205035, Fig 2.6). The recut was fairly shallow, between 0.15m and 0.4m deep, and the profile varied from a narrow U-shape to a wide flat-bottomed profile. However, as with the inner ring-ditch, the recut may simply reflect differential infilling and silting processes rather than a distinct phase of reuse.

Discussion

Monument 193165 was relatively low-lying, but its location on a slight knoll on the Ebbsfleet Peninsula, with marsh and open water to the east, west and south, means that it would have been quite prominent in the surrounding landscape. Further Early Bronze Age monuments were investigated on the higher ground in Zones 8, 13, 21 and 23, but the only comparable feature within the immediate area was a small ring-ditch of possible Late Neolithic or Early Bronze Age date recorded in earlier excavations in Zone 4, approximately 300m to the north, beneath what is now the access road to the Weatherlees Waste Water Treatment Works (Hearne *et al* 1995, 247–50).

Elsewhere in the southern part of the Ebbsfleet Peninsula (Zones 1–2), no features have been assigned to the Early Bronze Age (or earlier). However, some worked flint was recovered, mainly as residual finds from various features across the area.

Zones 7 and 8

The only feature within Zone 7 to be tentatively identified as Early Bronze Age was an isolated pit (295010) towards the southern end of the zone which contained a single small and abraded sherd of Beaker pottery decorated with horizontal combed lines defining panels of diagonal lines. The pit, which had a maximum width of 1.22m and depth of 0.26m (Fig 2.7), had been truncated by an enclosure ditch (201084) of Middle Roman date, and also contained a broken flint core and a small fragment of animal bone. All the finds were recovered from the upper of the two fills (259008).

The most prominent features within Zone 8 comprised two sets of double ring-ditches which occupied the brow of Cottington Hill where they would

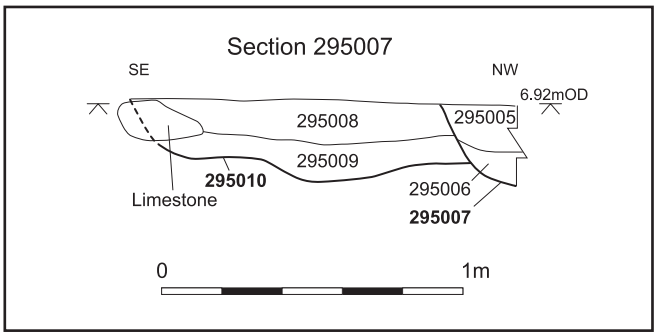
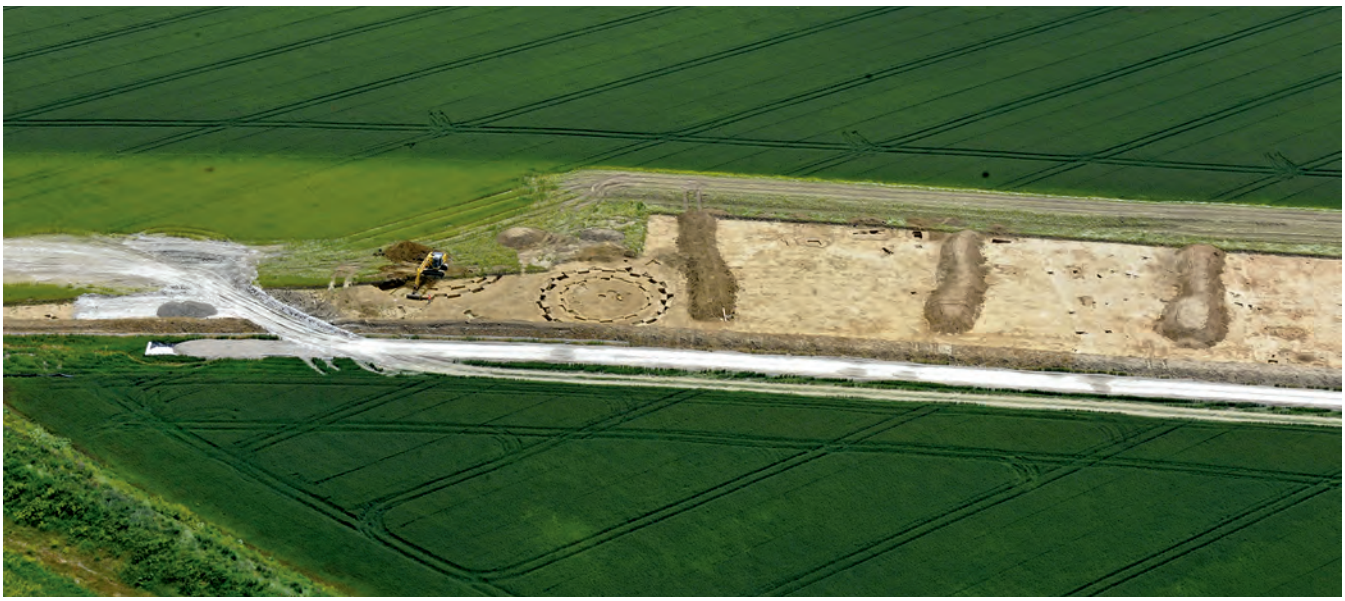


Fig 2.7 Section of Early Bronze Age pit 295010 (Zone 7)



Pl 2.6 Early Bronze Age barrows 273014/273092 and 144097/144111 on Cottington Hill (Zone 8; view from west)

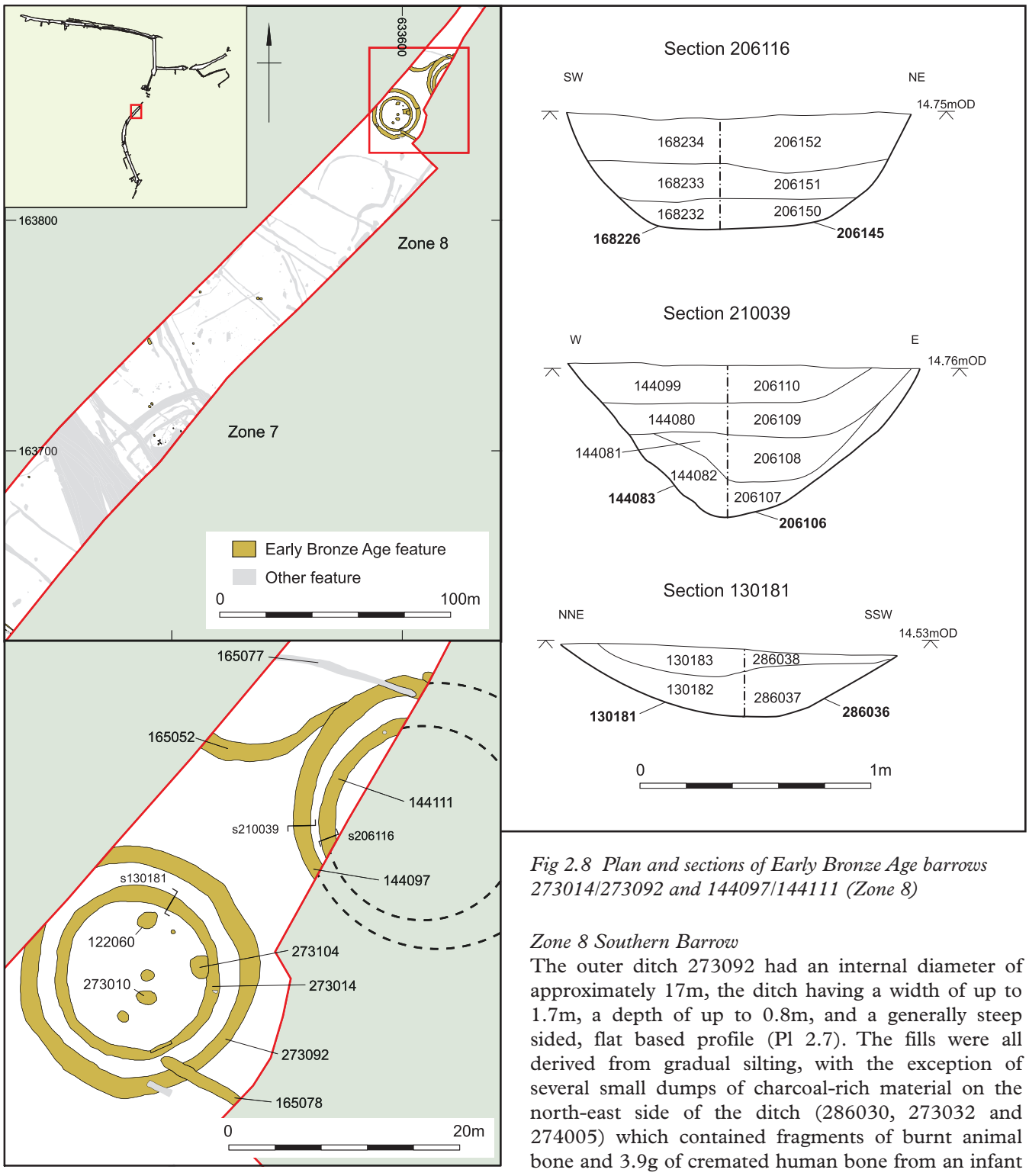


Fig 2.8 Plan and sections of Early Bronze Age barrows 273014/273092 and 144097/144111 (Zone 8)

have been clearly visible from the south (Pl 2.6). The sets of ditches were adjacent to each other, and are likely to represent round barrows (Fig 2.8). The Southern Barrow was almost entirely exposed within the confines of the excavation, with only part of the north-western side outside the site boundary. The majority of the northern example was, however, beyond the limit of excavation, and extended to the east. All of the ditches were excavated in a series of opposing longitudinal sections, and after recording, the remaining fills were carefully removed in shallow spits by machine.

Zone 8 Southern Barrow

The outer ditch 273092 had an internal diameter of approximately 17m, the ditch having a width of up to 1.7m, a depth of up to 0.8m, and a generally steep sided, flat based profile (Pl 2.7). The fills were all derived from gradual silting, with the exception of several small dumps of charcoal-rich material on the north-east side of the ditch (286030, 273032 and 274005) which contained fragments of burnt animal bone and 3.9g of cremated human bone from an infant (>5 yr) and an adult/subadult (>13 yr). The source of this burnt material is unclear. Finds were, with the exception of burnt flint, all recovered from the upper fills and consisted of pottery sherds of Early Neolithic, Bronze Age, Late Iron Age and Roman date, very occasional animal bone fragments and struck flint probably of Neolithic date.

The internal ditch 273014 had a diameter of 13m and was approximately equidistant from the outer one; it was narrower and less deep, with a maximum width of 0.9m and depth of 0.31m (Fig 2.8). The fills had accumulated gradually, and the finds were limited to a few non diagnostic struck flints and a single pot sherd

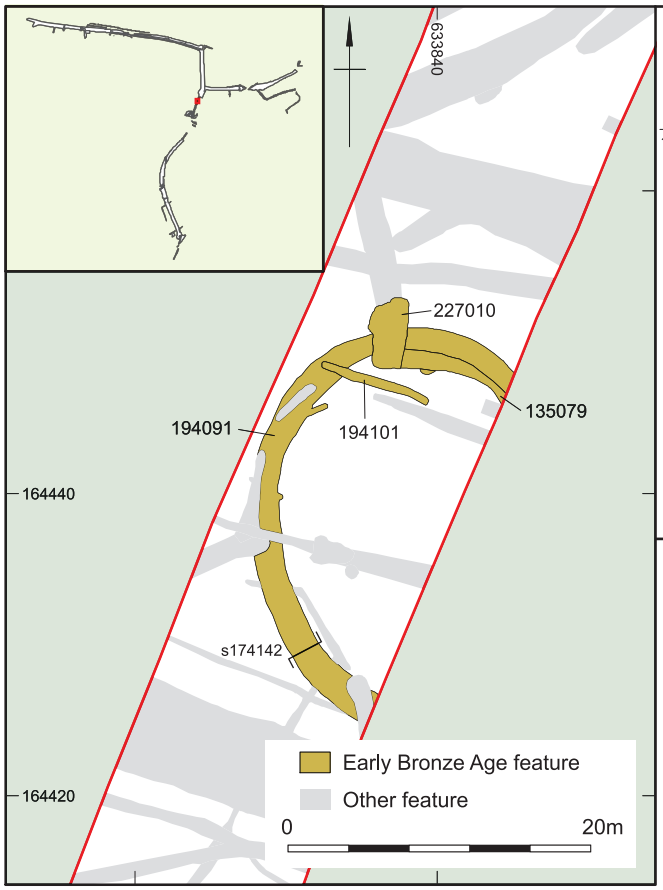
Pl 2.7 Early Bronze Age barrows 273014/273092 centre and 144097/144111 upper left (Zone 8; view from west)

which was too small to identify beyond a generic prehistoric date.

There was no evidence for any central mound within the inner ditch, and although several features were present in this area – both pits and natural features, as well as a ditch (165078), no graves were identified. Of the pits, 122060 and 273010 contained pottery and flint respectively (both of Late Bronze Age date), and pit 273104, which cut the barrow ditch, contained several struck flints of Neolithic date which are certainly residual. The pits are not thought to be the remains of disturbed graves.

Previous work in the vicinity had noted several sandstone blocks or 'doggers' (Perkins 1992a), and there is a slight possibility that one or more of the oval, generally shallow pits within the area enclosed by the inner ditch could have provided settings for such stones. However, this remains entirely speculative, as does the date at which such an operation might have taken place, and local parallels are lacking.

Pl 2.8 Early Bronze Age oval ditch 194091 (Zone 10; view from north-west)



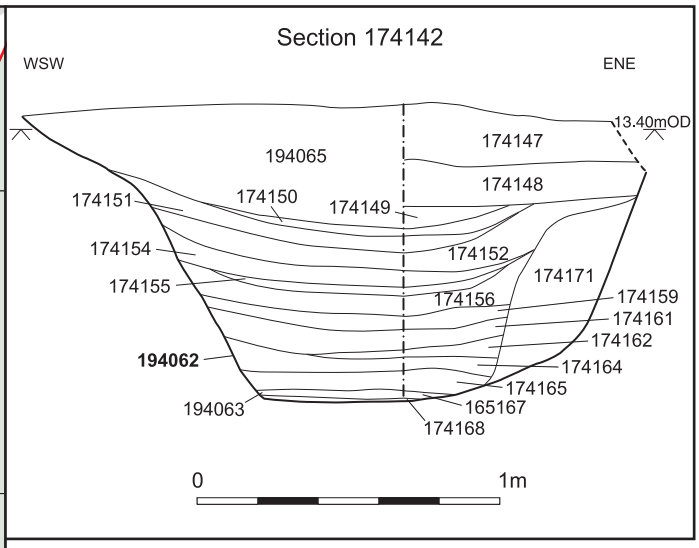


Fig 2.9 Plan and section of Bronze Age enclosure/oval ditch 194091 (Zone 10)

Pl 2.9 Bronze Age oval ditch 194091, typical fill sequence (Zone 10; view from west)

Zone 8 Northern Barrow

This barrow (Fig 2.8) is likely to have been of a similar size to its southern counterpart, although only the north-western part was available for excavation. The external ditch 144097 also measured up to 1.7m wide and was 0.55–0.75m deep; it had several episodes of infilling, all indicative of gradual silting. The only finds recovered from the primary silts were two flint cores and a flake of broad Bronze Age date range, but struck flints of likely Neolithic date were recovered from several areas of secondary infilling, with a small sherd of possible Beaker pottery from the upper fill. Other pottery sherds were too fragmentary to date accurately. To the west, barrow ditch 144097 cut a curvilinear ditch 165052 which contained a few struck and burnt flints which could not be closely dated, but a similar Early Bronze date seems likely.

The inner ditch 144111 was 2m from the outer ditch at their northernmost point, but this gap narrowed to around 0.5m to the south, and it could be that the ditches were not contemporary, and that they may even have intersected further to the east beyond the limit of excavation. Ditch 144111 was 1.2–1.4m wide and 0.40–0.52m deep, and contained no finds, nor any evidence for the existence of a central mound based on the patterns of the fill deposits.

Zone 10

Part of an apparently oval-shaped enclosure (194091) was found towards the northern end of Zone 10 on relatively low-lying, gently sloping ground (Fig 2.9). The enclosure ditch, which was only partly exposed within the excavated area, was up to 25m across and continued to the east within the area of preservation *in situ* (Pl 2.8). In profile the ditch was steep-sided, often more flared towards the top, with a flat base, and was up to 2m wide and 1.1m deep (Fig 2.9). The basal fills consisted of thin bands of light grey silts, probably deposited in standing water or washed in, from which no finds were recovered. The upper fills tended to be darker, and the direction of visible tip lines indicates that the feature may have had an external bank (Pl 2.9). Neolithic flint was recovered from two areas of secondary fill, though this may derive from an earlier pit (123001, see above); burnt flint, degraded animal bone and 0.2g of cremated human bone were also found. Pottery, also recovered from secondary fills, was of Late Bronze Age and Late Iron Age or Early Roman date, suggesting that the ditch still survived as a shallow earthwork at this time. Substantial later ditches/trackways immediately to the north (197031) and south (194104) appeared to respect the circuit of ditch 194091, indicating that the feature was extant and respected in the later Iron Age.

A segment of earlier ditch, 135079, was present to the north-east and curved at a similar angle to 194091, which cut it. The ditch contained burnt flint

and a single worked flint only assigned a generic prehistoric date. This feature could have been a precursor to ditch 194091, and evidence for this was also recorded elsewhere, for example, fill 174171 in section 174142 (Fig 2.9).

A short length of west-east ditch (194101) cut the fill of ditch 194091 and terminated within the enclosure. Ditch 194101 may have been a Middle Bronze Age field boundary and contained three small abraded sherds of Beaker pottery with possible comb impressions. The sherds were, however, recovered from the intervention excavated to examine the relationship between the two ditches, and could have derived originally from the upper fills of ditch 194091. Immediately to the north, a single sherd of Beaker pottery was recovered from the only fill of shallow sub-rectangular pit 227010, which contained a tiny fragment of cremated human bone. This pit also cut ditch 194091, so again the finds could have originated from within the upper fills of the ditch. Whatever their source, the Beaker sherds were almost certainly residual, whilst the cremated bone hints at the possibility of a disturbed burial nearby.

There is some uncertainty about the date and function of enclosure 194091 but the topographic setting of enclosure 194091 would be unusual for a ring-ditch or barrow on Thanet and in size and shape it may be compared with the nearby enclosure at Laundry Road, Minster which was associated with Beaker pottery (Boast and Gibson 2000).

Zone 13

Two sets of ring-ditches most likely marked the locations of round barrows (Fig 2.10). The two lay adjacent, with 134097/193125 (Barrow 1) only 24m north-west of the larger monument, 134100 and its recut 134096 (Barrow 2). The barrows were situated to take advantage of a small spur or promontory of high ground above the 25m contour overlooking Cliffs End and Pegwell Bay. Natural chalk was exposed here (with

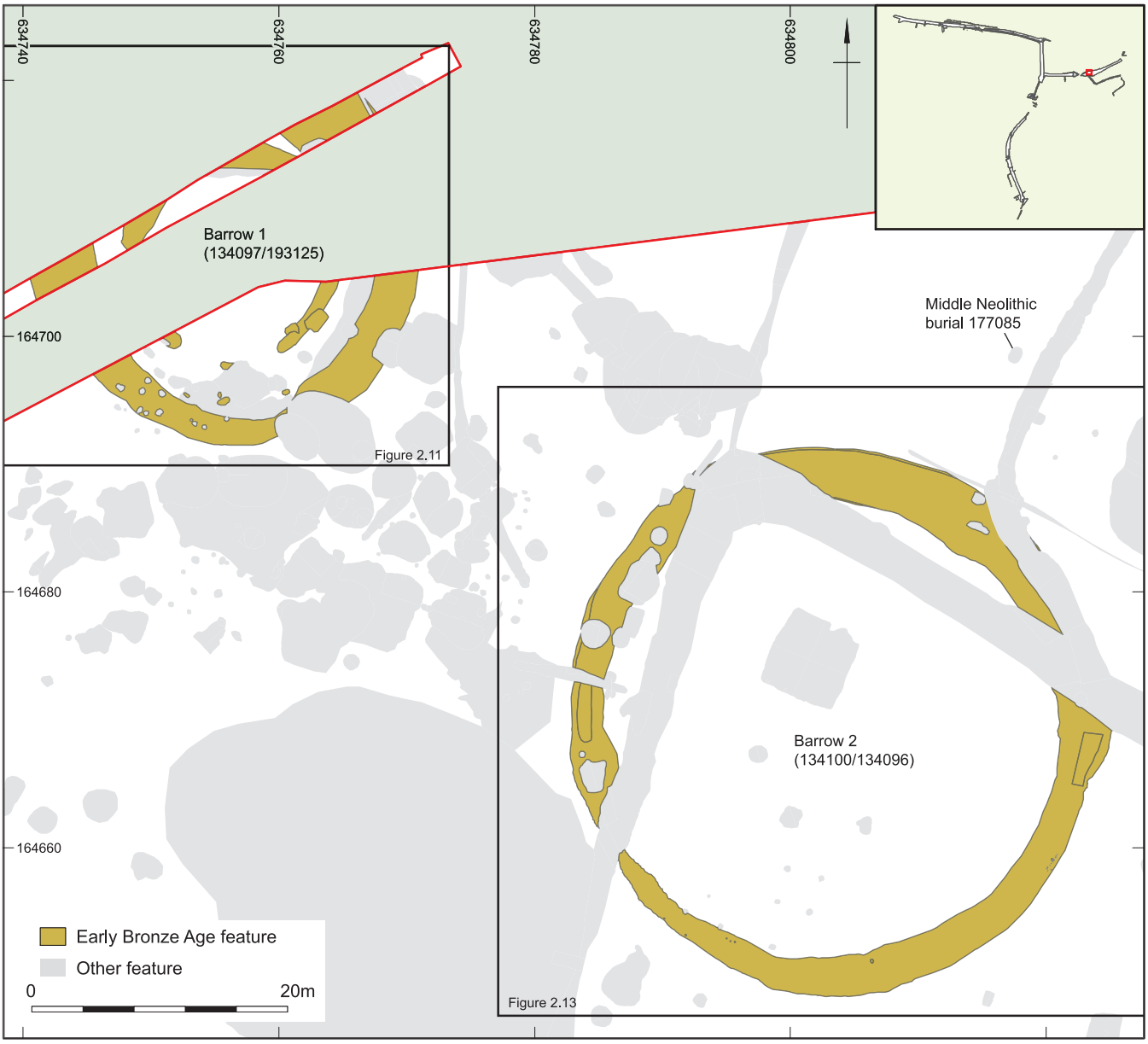


Fig 2.10 Plan of Early Bronze Age barrows 1 (134097/193125) and 2 (134100/134096) (Zone 13)

brickearth to the east), heavily truncated by ploughing, and the ring-ditch of Barrow 2 showed as a clear cropmark on aerial photographs.

Approximately 60% of the exposed parts of both ring-ditches were excavated by hand, mainly in a series of longitudinal sections. Following recording, the remainder of the ditch sections were removed in spits by carefully controlled machining.

The interior of Barrow 2 was completely excavated but there was no surviving grave or other feature in the centre; indeed, there were no contemporary internal features. In the case of Barrow 1 approximately half of the interior, including an 8m-wide strip across the centre, lay outside the area of excavation, so such central features may have been present. No trace of a mound survived within either of the barrows, and the existence of central mounds, or internal or external banks, could not be inferred with any certainty from the excavated ditch sections. However, the disposition of graves within Barrow 1 is likely to indicate the former presence of a central mound and surrounding berm.

Barrow 1 (134097 and 193125)

Barrow 1 was only partly exposed (Figs 2.11–12; Pl 2.10). Approximately the south-eastern third lay within the excavated area, with another narrow strip 8m to the north-west excavated within a gas main trench. North-west of this, the barrow had been destroyed by a railway cutting. The barrow was demarcated by a pair of approximately circular concentric ditches.

The outer ditch (134097) had an estimated external diameter of 30m, a maximum width at the top of approximately 5m, and a maximum surviving depth of 2m. The broad, moderately sloping top of the ditch largely resulted from weathering of the chalk around the original edges, and when dug the feature would probably have been a somewhat narrower and steeper sided, perhaps not much more than 2.5m wide with a narrower (0.30m wide) 0.30m-deep slot in the base (Pl 2.11). In places, particularly to the south-west, the ditch had one or more distinct steps in both sides of the profile (Pl 2.12). A general similarity of fills and sequences was apparent in the excavated sections, suggesting a continuous circular ditch (unless a causeway lay in one of the unexcavated or destroyed areas) which had been left to fill gradually over millennia. The upper fills (eg, 130017) contained abundant fragmentary weathered chalk, no doubt reflecting a relatively long, slow process of infilling, with larger pieces of chalk in the lower fills (eg, 130018), which also had a higher proportion of silt, a result of an initial period of more rapid erosion of the ditch sides and mound material.

Very few finds were recovered from the fills of ditch 134097; ceramics were of Iron Age date or later, most probably deriving from one or more of the Middle Iron Age features cutting the ditch on the south-east side. Small quantities of lithics were scattered throughout the excavated sections (mostly flakes and other debitage), but few were diagnostic and all are likely to have been redeposited. A chalk spindlewhorl blank, recovered from high in the sequence, is most probably of Iron Age date. Small quantities of animal bone and shell were recovered from some of the upper fills: most are of Iron Age date or later. There was also a very small quantity of human bone in the upper fills, from at least two individuals, an adult and a foetus, which could date to either the Bronze or Iron Age.

The inner ditch (193125) was of a different character to the outer, being narrower (up to 2m wide, on the north-west side) and shallower (0.9m deep maximum) with a flat base. Whereas ditch 134097 was continuous, 193125 was segmented or possibly penannular. The exact form of the inner ditch was not established: the northern, eastern and western portions may have formed a single continuous ditch, but the southern side consisted of at least three individual segments separated by relatively wide breaks. An alternative and perhaps more likely interpretation is that 193125 was a penannular ditch, with a 7.5m wide south-facing entrance and a posthole or similar feature centrally placed within this entrance. However, the possibility that there were further breaks in unexcavated or destroyed areas must be borne in mind. Assuming a generally circular shape, the maximum external diameter would have been 16m. The only finds recovered from ditch 193125 were three flint flakes and two blades.

There is nothing to indicate if the two circuits of ditch were contemporary, but if one was constructed later then it clearly took account of the earlier monument. Local and national comparanda might suggest that the inner ditch is the earlier, given that its size and morphology are not unlike other segmented ditched barrows of Early Bronze Age date which were subsequently enlarged by the addition of a wider outer ditch (eg, Barrow 1 at Cliffs End Farm: McKinley *et al* forthcoming; Barrow 12 at Radley: Barclay and Halpin 1999, 97–111).

At least eight graves, comprising seven inhumation burials and one cremation burial, were located between the inner and outer ditches with (as far as could be seen) a focus of graves within the berm to the south of the entrance to what may have been a penannular inner ditch (Figs 2.11–12). Two of the graves (136129 and 136132), both containing adult males, were cut through the fill of inner ditch 193125, close to the terminal on the south-east side, providing a modicum of evidence that this was the earlier of the two ditches. Most of the remaining graves contained infants and juveniles, including the only burial accompanied by grave goods. Five graves were dated, the earliest of which was 159132 which contained the unurned cremation burial of an adult, possibly male, that was dated to 2030–1770 cal BC (3565±30 BP; SUERC-40278, see Table 2.4). It is possible that this burial was contemporary with the initial construction of the monument.

Two of the inhumations were of Early Bronze Age date. Grave 136129 contained the crouched inhumation of a 35–45 old, possibly male, placed on their right hand side facing south-east. The burial was radiocarbon dated to 1900–1700 cal BC (3490±30 BP; SUERC-40290). Grave 136132 contained an inhumation burial of a young adult, possibly male, radiocarbon dated to 1880–1660 cal BC (3435±30 BP; SUERC-40291). The degraded condition of the skeleton meant that it was not

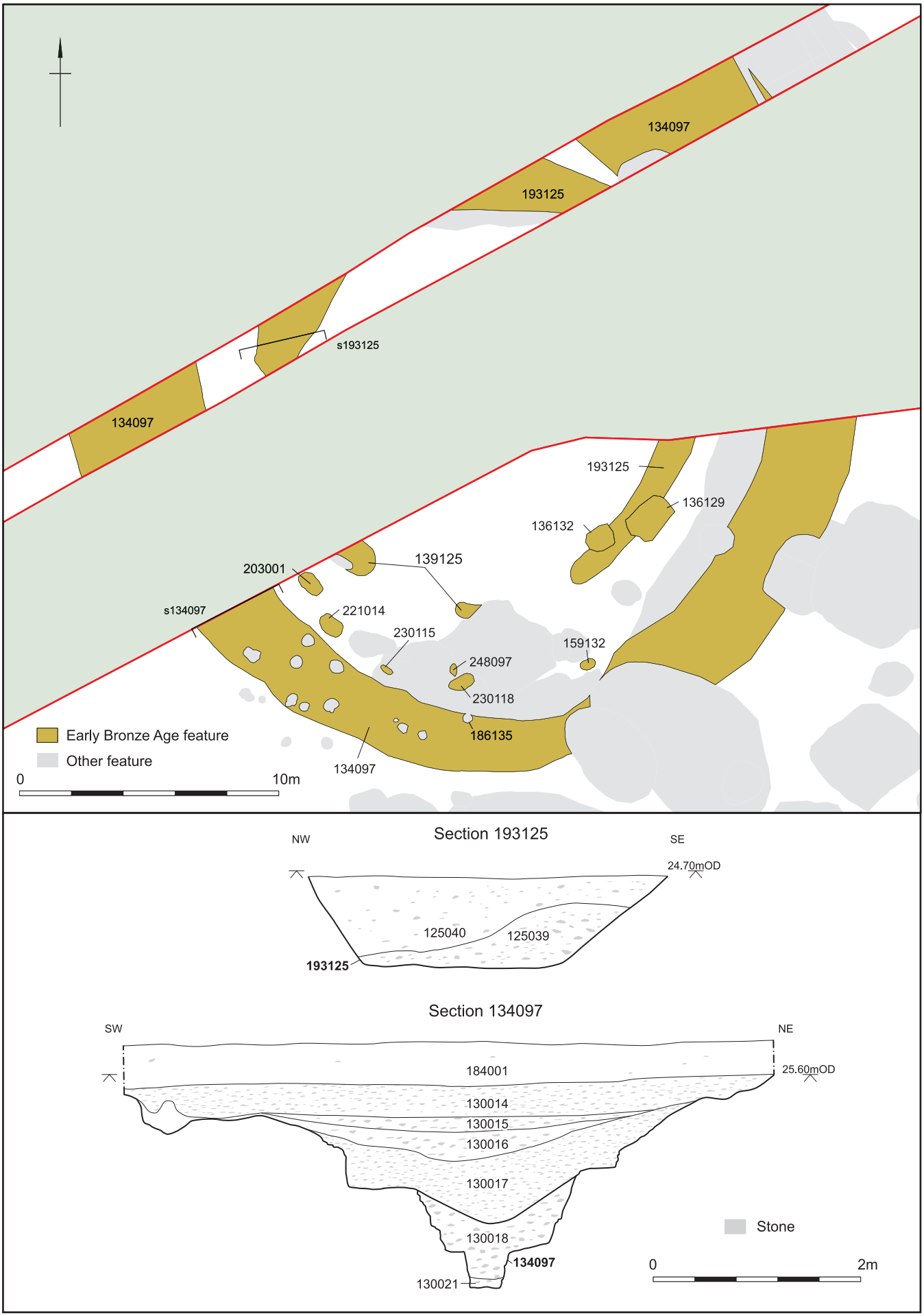


Fig 2.11 Plan and sections of Early Bronze Age barrow 134097/193125 (Zone 13)

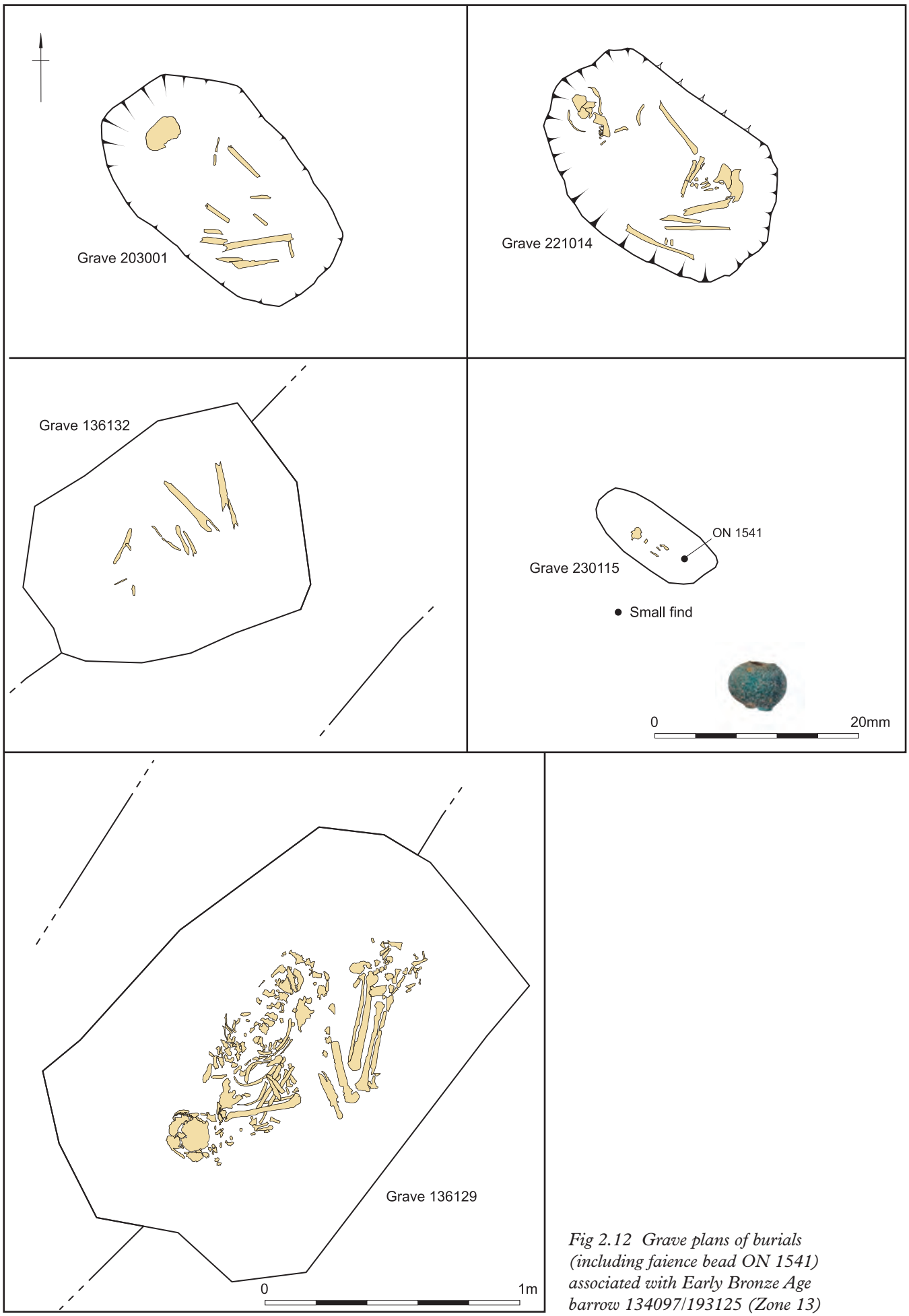


Fig 2.12 Grave plans of burials (including faience bead ON 1541) associated with Early Bronze Age barrow 134097/193125 (Zone 13)

Pl 2.10 Early Bronze Age ring-ditch 134097/193125 (Barrow 1), nearing completion of excavation (view from east)

possible to determine the position of the body. Two burials may have been of Middle Bronze Age rather than Early Bronze Age date (see below), and both lay close together to the south-west; grave 203001 was radiocarbon dated to 1610–1430 cal BC (3230±30 BP: SUERC-40298) and grave 221014 was dated to 1530–1410 cal BC (3210±30 BP; SUERC-40300). The three other burials were not dated because they were of infants or juveniles and only small quantities of their bones survived in what appears to have been moderately aggressive burial conditions. Grave 230118 contained a 5–12 year old and 248097 a 7–9 year old. Grave 230115 contained the burial of a 2–3 year old infant and from the grave fill came two tiny scraps of sheet gold and a faience bead, the latter towards the lower, south-east end of the grave.

One other instance of human remains in Zone 13 belonged to this same chronological point at the end of the Early Bronze Age and start of the Middle Bronze Age. Early to Middle Iron Age sunken-featured building 174060 (see below) contained the cranium of an adult (over 35 years old), possibly male, cleanly cut with a sharp weapon such as an axe or halberd, from midway across the eye sockets to the rear of the head, where there is also some other possible trauma. This cranium returned a radiocarbon determination of 1880–1680 cal BC (3445±30 BP: SUERC-40292). The coincidence of dates between this skull and the inhumation burials in Barrow 1 suggest that the skull may have originated in this same cemetery.

Grave catalogue

Grave 136129 (Burial 136128)

Grave: SW–NE, sub-rectangular with vertical sides and flat base – 1.83 x 1.17m, 0.71m deep. Light greyish brown sandy silt fill, 95% small and medium chalk fragments.

Human Remains: Burial is crouched on right hand side. *c* 84% skeletal recovery. Adult *c* 35–45 yr.?Male.

Radiocarbon dating: 1900–1700 cal BC (3490±30 BP; SUERC-40290).

Grave 136132 (Burial 136131)

Grave: SW–NE, sub-rectangular with shallow sloping sides and flat base – 1.27 x 1.06m, 0.14m deep. Mid-greyish brown sandy silt fill, 80% fine chalk fragments.

Pl 2.11 Early Bronze Age ring-ditch 134097/193125 (Barrow 1), section of outer ditch on west side (Zone 13; view from south)

Pl 2.12 Early Bronze Age ring-ditch 134097/193125 (Barrow 1), section of outer ditch and adjacent quarry on south side (Zone 13; view from north-west)

Human Remains: Highly degraded. *c* 29% skeletal recovery, upper limbs. Adult >18 yr. ?Male.
Radiocarbon dating: 1880–1660 cal BC (3435±30 BP; SUERC-40291).

Grave 159132 (Burial 159133)
Grave: SW–NE, sub-rectangular with shallow sides and flat base – 0.62 x 0.39m, 0.13m deep. Single silt fill.
Human Remains: Unurned cremation burial. 328.2g cremated bone and redeposited pyre debris. Adult >35 yr. ?Male.
Radiocarbon dating: 2030–1770 cal BC (3565±30 BP; SUERC-40278).

Grave 230115 (Burial 230116)
Grave: SE–NW, sub-rectangular with steep sides and flat base – 0.51 x 0.24m, 0.21m deep. Yellowish brown silty clay fill, abundant chalk inclusions.
Human Remains: Burial position unclear. *c* 2% skeletal recovery. Infant *c* 2–3 yr.
Grave Goods:
ON 1541: small, spherical blue faience bead.
Two tiny fragments of gold sheet.

Grave 230118 (Burial 230119)
Grave: SW–NE, sub-rectangular with shallow sides and flat base – 1.00 x 0.70m, 0.20m deep. Mid-brownish grey silty clay fill, very common chalk inclusions.
Human Remains: Burial position unclear. *c* 7% skeletal recovery. Juvenile *c* 5–12 yr.

Grave 248097 (Burial 145233)
Grave: N–S, sub-oval, tapered to the east with shallow sides and flat base – 0.46 x 0.24m, 0.18m deep. Single brown sandy silt fill.
Human Remains: Burial position unclear. *c* 25% skeletal recovery. Juvenile *c* 7–9 yr.

Barrow 2 (134100 and its recut 134096)
Barrow 2 lay approximately 0.5m higher than Barrow 1, and unlike Barrow 1 had a single ditch which had been re-dug on at least one occasion which, it is suggested below, saw an early change in its nature and use. In its final state, the ditch formed a complete circuit and was the largest ring-ditch on the EKA2 (Fig 2.13; Pl 2.13).

The original cut (134100: see Neolithic above) appears to have filled to at least the level of the modern machined surface before a second ditch (134096) was dug. This second ring-ditch had an external diameter of 43m, a maximum width at the surface of 3.2m and a maximum depth of 1.3m. The base of the ditch was flat and approximately 1m wide, with steep sides which splayed outwards from approximately half way up to form a broad weathering cone (see Pl 2.14). There is no indication of how long a period elapsed between the original ditch falling out of use and the second ditch being dug. The assumption is that original ditch cut 134100 was broadly contemporary with other hengiform monuments indicating a Late Neolithic date. An inhumation burial (200089, in grave 200092) made in ditch 134096 (Barrow 2) on the north-eastern side when the ditch was only approximately half full was radiocarbon dated to the Middle Bronze Age 1420–1220 cal BC (3055±30 BP: SUERC-40297) (see below). The fills of 134096 were cut in the same area by a palisade ditch (134095, see below) which was dated by ceramics to the Late Bronze Age. It seems probable then that the ditch of Barrow 2 was dug into the remains of the former monument in the Early Bronze Age and filled gradually over the next millennium and a half.

The long period over which the barrow ditch became in-filled was indicated by the material from its fills. Although there were local variations, for the most part the ditches had five main fills or groups of fills, the lowest three of which probably date to the Bronze Age and are likely to represent gradual silting. Finds were few, and limited to very small quantities of animal bone, marine shell, burnt flint, worked flint (blades, flakes, cores, rejuvenation tablets, burins and scrapers), fired clay, a few sherds of Early Iron Age pottery (which is probably intrusive) and – in one instance – disarticulated human bone. In places, above these three fills was a finds-rich layer which appeared to contain domestic refuse and to mark a hiatus in the in-filling of the ditch. This (and the two fills above it) belong to the end of the Early and beginning of the Middle Iron Age, as

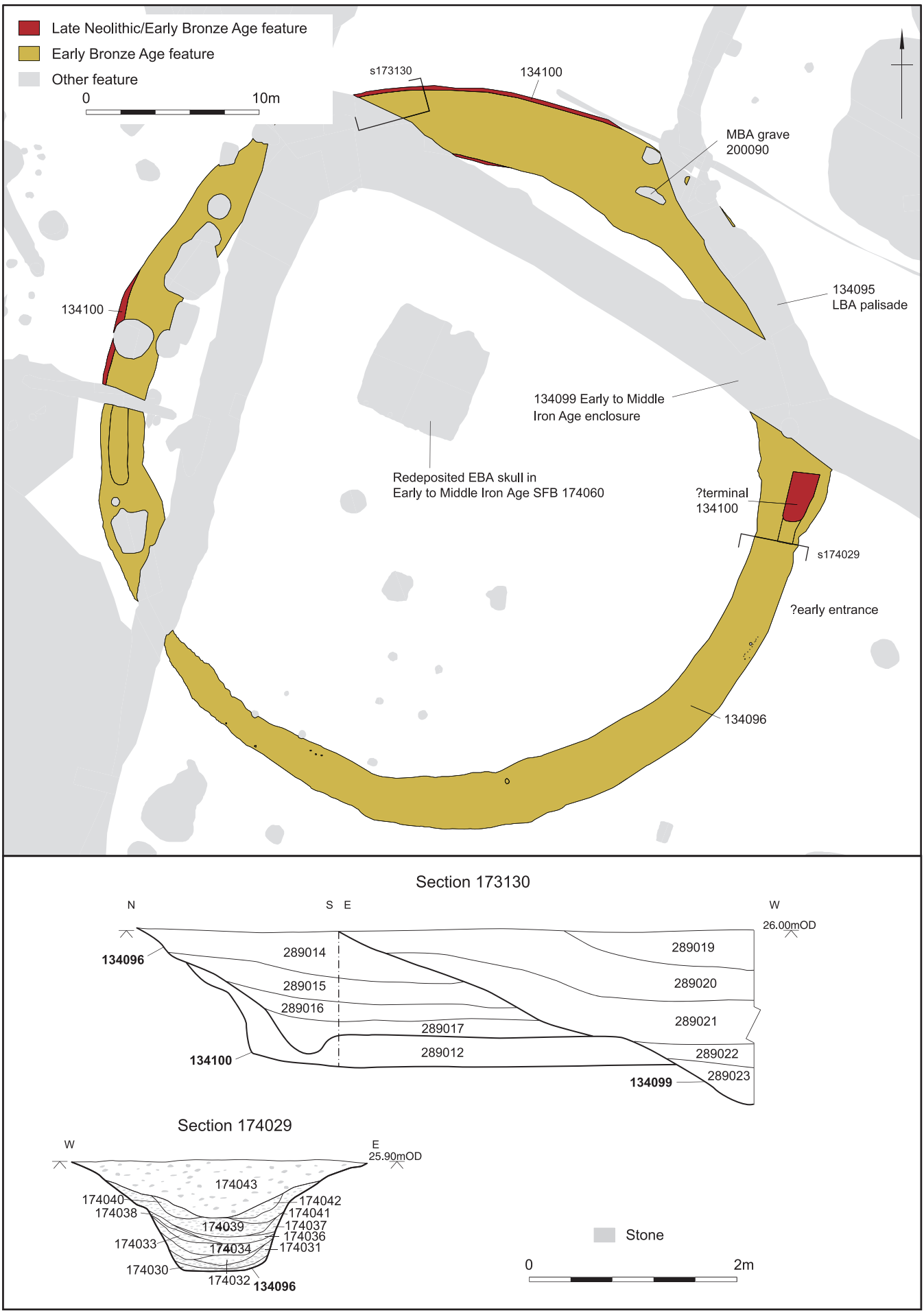


Fig 2.13 Plan of Early Bronze Age barrow 134100/134096 (Zone 13)

Pl 2.13 Early Bronze Age ring-ditch 134100 (Barrow 2) in course of excavation (Zone 13; view from south-east)

demonstrated by the comparatively large quantities of animal bone, marine shell (periwinkle, mussel and oyster), fired clay and triangular brick fragments (briquetage supports) and pottery (predominantly of Early–Middle Iron Age date). The material perhaps formed part of an episode of deliberate backfilling at the time that the Iron Age trapezoidal enclosure (134099, see Chap 3) was laid out across the area. Two pieces of metalwork, both from the uppermost fills, comprise a copper alloy buckle frame of medieval date and clearly intrusive, and a cast copper alloy object broadly resembling an arrowhead, the latter undated but likely to be post-Roman.

Pl 2.14 Early Bronze Age ring-ditch 134100 (Barrow 2), typical fill sequence (Zone 13; view from north-east)

Discussion

The ring-ditches in Zone 13 do not stand in isolation. David Perkins recorded 315 ring-ditch cropmarks on Thanet (Perkins 2004), many of which are likely to be Early Bronze Age barrows. Indeed, the EKA2 road scheme investigated a number of these cropmarks, confirming the existence of barrows in Zones 8, 21 and 23 as well as in Zone 13 (see Fig 2.22).

The most immediate comparanda for the Zone 13 barrows are not from the road scheme, however, but in the two barrow cemeteries at Cliffs End Farm, 380m to the south (Leivers forthcoming), and at Lord of the Manor, 800m to the north-east (Macpherson-Grant 1977; Perkins 1980a-b; 1989). The Zone 13 barrows have much in common with both groups.

While Barrow 1 is of comparable scale and morphology to some of the Cliffs End Farm examples, Barrow 2 is very much larger (and, indeed, larger than any other known example on Thanet), although the Ringlemere Farm henge-barrow on the opposite side of the Wantsum Channel is the largest in the region, with a maximum diameter in the region of 50m (Needham *et al* 2006) (Table 2.1). Perkins discusses what he refers to as 'Thanet's larger ring-ditch monuments' defined by him as 'between 20m and 40m diameter' (Perkins 2004, 76). Apart from the scale, what unites Barrow 2 with this class of ring-ditch is the fact of modification. While none of Perkins' examples exhibit all of the modifications he lists, the one shared by most is 'recutting the whole ditch leaving traces of the original fill and chalk-cut profile in section' (Perkins 2004, 80). Two of his three examples are at Lord of the Manor. Both Nigel

Table 2.1 Comparative sizes of barrows in EKA Zone 13 and local sites in Thanet

	Ditch 1	*Ditch 2 (diameter in m)*	*Ditch 3*	*Segmented*	*Entrances*
Cliffs End Farm					
Barrow 1	25	15	-	No/Yes	No/Yes
Barrow 2	24	-	-	No	Yes
Barrow 3	27	-	-	No	Yes
Barrow 4	26	18	11	Yes/No/No	Yes/No/No
Barrow 5	22	14	-	Yes/No	Yes/No
Barrow 6	27	-	-	Yes	Yes
Zone 13					
Barrow 1	30	16	-	No/Yes	No/Yes
Barrow 2	43	-	-	No?/No	No?/No
Lord of the Manor					
I	30	-	-	No/No/No	No/Yes/No
IIa	13	-	-	No	No
IIb/c	17	15	-	No	No
IId	25	-	-	No	Yes
III	30	-	-	No	Yes
IV	13	-	-	?	?
V	30	-	-	?	?

Macpherson-Grant and David Perkins considered these large circular enclosures to date to the Late Neolithic and to be (or to be related to) henges. Although this has been challenged (see below) the possibility that there was an entrance on the eastern side of Barrow 2 may support this contention, although so little survives of the original ditch that the existence of the entrance cannot be certain.

The cremation and inhumation burials in the interior of Barrow 1 make its identification as a barrow straightforward. The oldest of the dated example is the unurned cremation burial 159133 (2030–1770 cal BC (3565±30 BP; SUERC-40278)), suggesting that – even if this burial (located as it is between the inner and outer ditches rather than under any assumed original central mound) was not strictly primary – cremation was the original rite, with inhumation (four dated examples spanning the end of the Early Bronze Age and beginning of the Middle Bronze Age) a later practice.

No human burials can be associated with the original use of Barrow 2, with the earliest dated inhumation there being Middle Bronze Age. If the structure was originally a Neolithic hengiform monument then no primarily funerary function need be imagined, with the structure not being associated with the disposal of human remains until the Middle Bronze Age, when at least one burial was made in the partially silted ditch. The total lack of contemporary features in the interior or of associated artefacts in the ditch fills makes an assessment of the use of either phase of Barrow 2 impossible.

Zone 20

A bronze awl found in a Roman context could derive from a disturbed Bronze Age grave for which there is no evidence.

Zone 21

Ring-ditches 194137, 216090 and 232168 were wholly or partly revealed within Zone 21, and were all of Bronze Age date (Fig 2.14). Radiocarbon determinations have provided Early Bronze Age (194137 and 216090) and Middle Bronze Age (232168) dates for these funerary monuments, and they are described here or, in the case of ring-ditch 232168, in the following chapter (but see also Table 2.4). Only one ring-ditch (216090) appeared as a cropmark and this lay at 50m OD on the south-east-facing slope of Telegraph Hill, at 55m OD the highest point on Thanet, towards the west end of the Chalk ridge. Ring-ditch 194137 lay approximately 300m to the east and 5m lower than 216090, and less than 100m from the western edge of a shallow dry valley which extended north to south down slope. No further ring-ditches lay within the EKA2 corridor east of the dry valley, in Zones 20 and 19, though a few examples are known in the vicinity from cropmarks and geophysical survey.

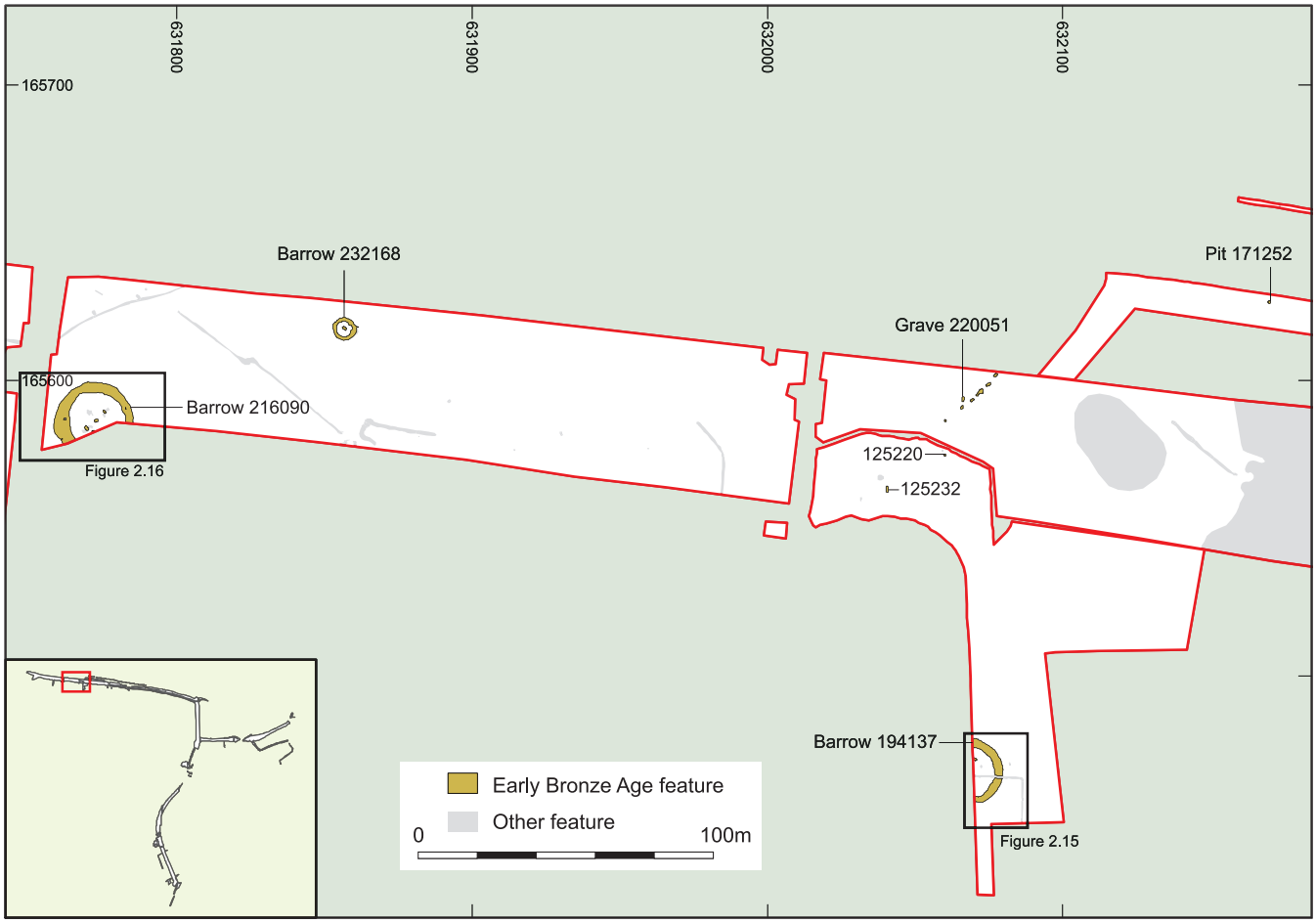
Approximately 60% of ring-ditches 194137 and 216090 were hand excavated, through longitudinal sections dug along their lengths, and the remainder of the fills were then removed in spits by carefully controlled machining.

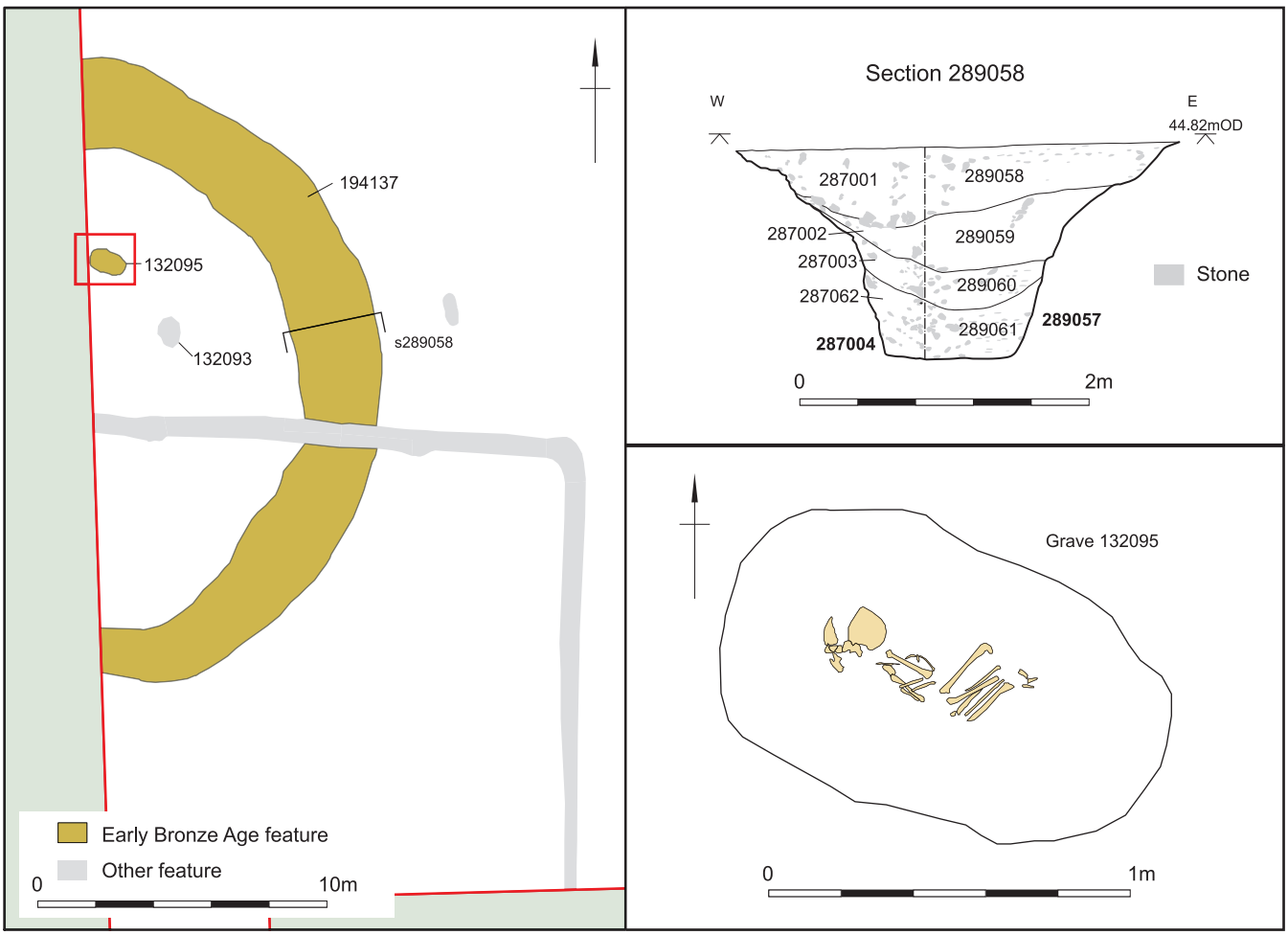
Barrow 194137

Ring-ditch 194137 was located on the west side of the southern extension to the zone, east of Wayborough Hill (Figs 2.14, 2.15; Pl 2.15). Only the eastern half of the ring-ditch was exposed, the remainder lying outside the limit of excavation, but it was estimated to be approximately 18m in diameter. The ditch was relatively narrow and deep, up to 2.9m in width and 1.6m in depth, and

Fig 2.14 (opposite, above) Plan of Early Bronze Age barrows 194137 and 216090, also showing Middle Bronze Age barrow 232168 (Zone 21)

Fig 2.15 (opposite, below) Plan and section of Early Bronze Age barrow 194137 (Zone 21)


631800
631900
632000
632100
165700
Barrow 232168
Pit 171252
Grave 220051
165600
Barrow 216090
Figure 2.16
125220
125232
Barrow 194137
Figure 2.15
Early Bronze Age feature
Other feature
0
100m


194137
132095
132093
s289058
Early Bronze Age feature
Other feature
0
10m
Section 289058
W
E
44.82mOD
287001
289058
287002
289059
287003
289060
287062
289061
289057
287004
Stone
0
2m
Grave 132095
0
1m

Pl 2.15 Early Bronze Age barrow 194137 (Zone 21; view from south)

Pl 2.16 Early Bronze Age barrow194137 in course of excavation (Zone 21; view from north-west)

contained a similar sequence of fills throughout (Pl 2.16). These were generally quite silty, with some eroded chalk, suggesting a process of gradual infilling. The greater quantity of chalk rubble around the inside of the ditch, particularly in the upper fills, is likely to be indicative of an internal bank or mound. Pottery from the fills ranged from Middle Bronze Age to Middle to Late Iron Age in date with some of the earlier pottery in later fills and *vice versa*, though most of this came from the upper sequence of fills (eg, 289058 and 289059). Other material included small quantities of animal bone, worked flint with a broad prehistoric date and a copper alloy fragment, possibly from a vessel.

There were two graves within the ring-ditch, both of which contained unaccompanied burials. One, 132095, was shallow and contained the crouched burial of a child approximately 5–6 years old lying on their left hand side facing north-east. It was radiocarbon dated to 1880–1640 cal BC (3435±35 BP; SUERC-40722). The other grave, 132093, was oriented north-south and survived as little more than a shallow scoop. It contained the burial of a child of less than 5 years of age which was disarticulated or disturbed, possibly by later cultivation. As a result it was not radiocarbon dated.

Grave catalogue

Grave 132093 (Burial 132094)

Grave: N–S oval cut with shallow concave profile – 1.12 x 0.7m, 0.5m deep (base at 45.86mOD). Mid-greyish brown sandy silt fill.

Human Remains: Burial is disarticulated/disturbed. 16 bone fragments recovered. >5 yr.

Grave 132095 (Burial 132096)

Fig 2.15

Grave: NW–SE, irregular oval cut with moderate, straight sides, irregular concave base – 1.26 x 0.76m, 0.2m deep (base at 44.96mOD). Mid-greyish brown sandy silt fill.

Human Remains: Burial is crouched, facing north-east, probable gap of 0.1m between head and north-west end of grave. *c* 68% skeletal recovery. Juvenile *c* 5–6 yr. ?Female.

Radiocarbon dating: 1880–1640 cal BC (3435±35 BP; SUERC-40722).

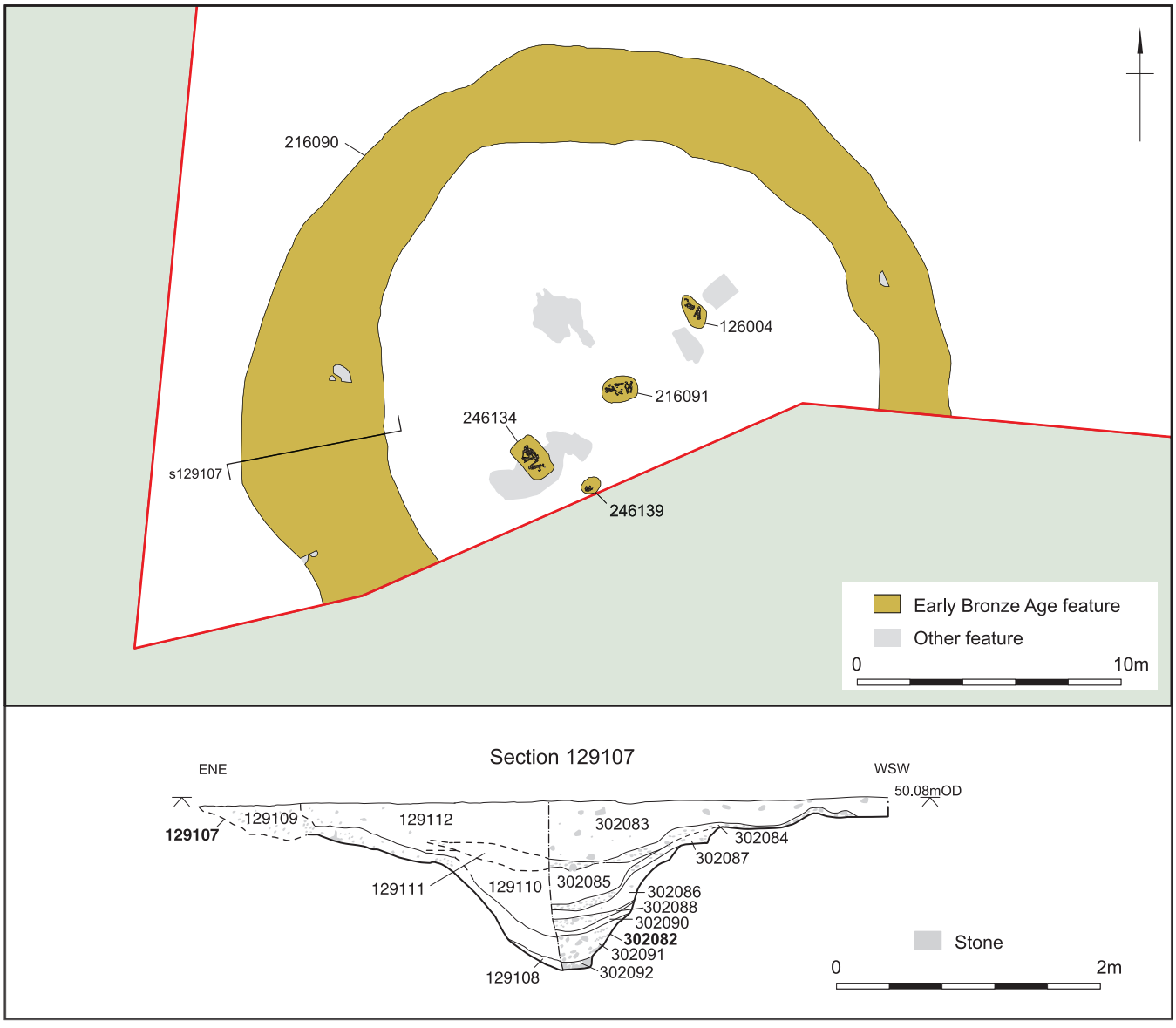


Fig 2.16 Plan and section of Early Bronze Age barrow 216090 (Zone 21)

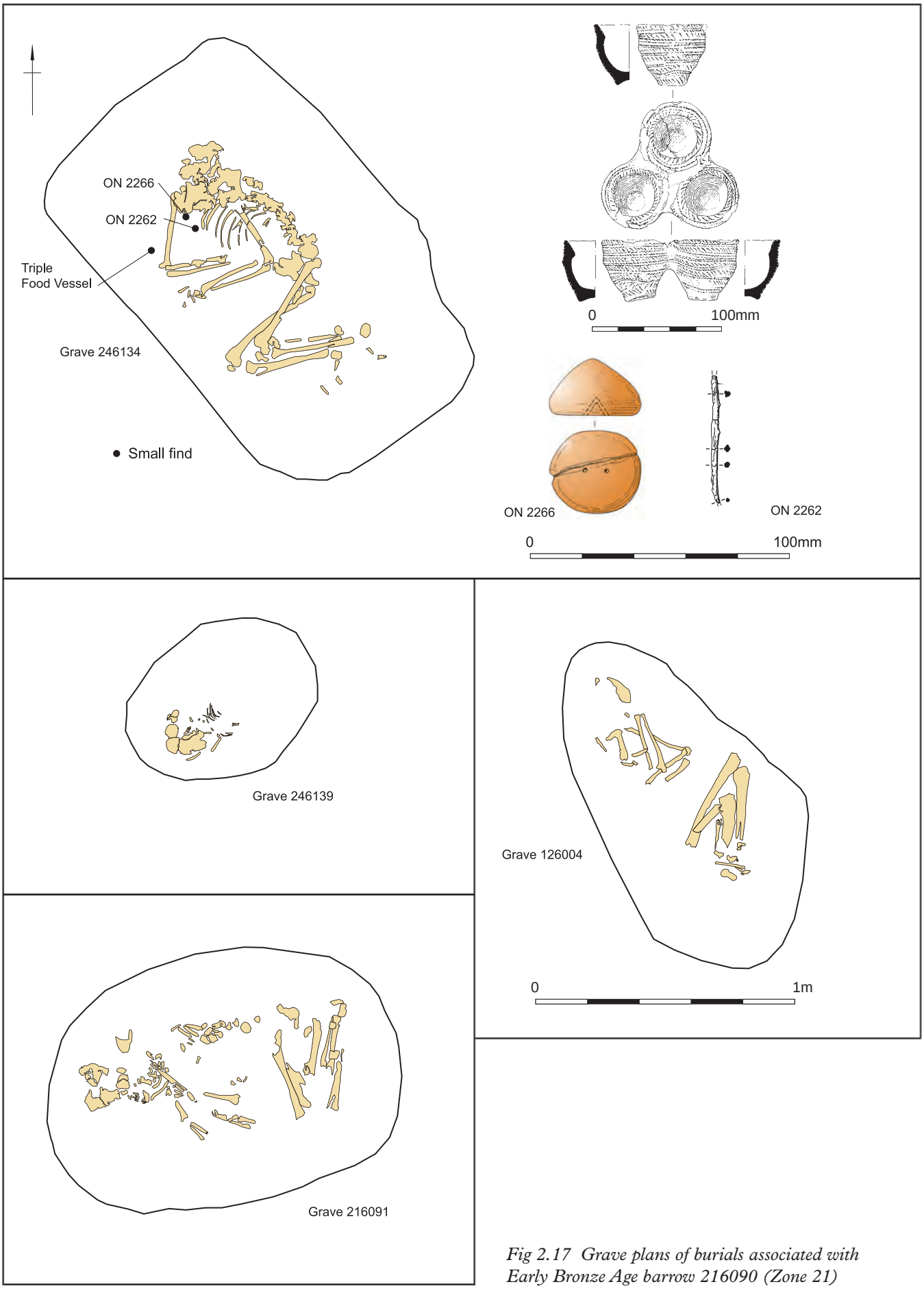


Fig 2.17 Grave plans of burials associated with Early Bronze Age barrow 216090 (Zone 21)

Pl 2.17 Early Bronze Age barrow 216090 (Zone 21; view from west)

Barrow 216090

Barrow 216090 lay at the west end of Zone 21, but only the northern two-thirds fell within the excavation area (Figs 2.14, 2.16 and 2.17; Pl 2.17). The ring-ditch was approximately 22.5m in diameter, 2.7m in width and up to 1.4m in depth with a broadly similar fill sequence along the excavated length. A concentration of eroded chalk and some chalk rubble around the inside within most of the layers suggests the presence of an internal mound or bank. As with the fills of the other ring-ditches in the area, the artefacts were not useful in dating the digging and early filling of the ditch. Pottery ranged from Late Bronze Age to medieval in date and even the latest pottery was found in the main body of the fill, not only in the upper silting layers. A relatively large amount of worked flint was recovered, some of which was identified as Bronze Age in date, but again, this was found throughout the fill sequence, including the middle and upper fills where it was certainly residual; worked flint was the only find from lower fills. In addition to this, a small amount of animal bone was recovered, as well as 10 heavily degraded fragments of disarticulated human bone, perhaps a disturbed burial, from the upper fill in the western part of the ring-ditch. These represented the remains of a young adult, possibly male (burial 302083). The date of this burial is unknown and it need not be Early Bronze Age; it could be Middle or Late Bronze Age or possibly of Iron Age date.

Four graves were revealed within the central area (126004, 216091, 246134 and 246139) and three of them appeared to lie in a row. Grave 216091 was oval and lay in the centre of the ring-ditch. It contained the crouched and unaccompanied burial of 20–25 year old, probably female, that had been placed on their right hand side facing south. The burial was radiocarbon dated to 1930–1740 cal BC (3510±35 BP; SUERC-40720). The sub-rectangular grave to the south, 216134, contained the crouched burial of a 16–19 year old, probably female, that had been placed on their right hand side facing south-west. The burial returned an almost identical determination to grave 216091 and the calibrated date is the same (1930–1740 cal BC: 3505±35 BP; SUERC-40721). This burial was accompanied by a copper alloy pin (badly fragmented) which was found in front of the upper chest, an amber button which was below the right shoulder, and a miniature triple Food Vessel, which was adjacent to the right elbow (Fig 2.17; Pls 2.18 and 2.35).

Pl 2.18 Grave 246134 in Early Bronze Age barrow 216090 (Zone 21; view from north). Triple Food Vessel by right elbow

The northern grave, 126004, was oval and contained the crouched burial of a 40–55 year old, probably female, that had been placed on their left hand side with the head facing north-east. The burial was radiocarbon dated to 1960–1750 cal BC (3535±35 BP; SUERC-40713). Grave 246139 was oval and lay to the south-east of grave 246134. It contained the burial of an infant aged approximately 10–12 months. As only a relatively small amount of bone was present it was not possible to establish the disposition of the burial or to radiocarbon date it.

Grave catalogue

Grave 126004 (Burial 126005)
Fig 2.17
Grave: NW–SE, oval with steep concave sides, concave base – 1.45 x 0.8m, 0.3m deep (base at 49.52m OD). Fill of mid-orange-brown sandy silt.
Human Remains: Burial is crouched, facing north-east, probable gap of 0.1m between head and north-west end of grave. *c* 71% skeletal recovery. Adult *c* 40–55 yr. ?Female.
Radiocarbon dating: 1960–1750 cal BC (3535±35 BP; SUERC-40713).

Grave 216091 (Burial 216092)
Fig 2.17
Grave: E–W, oval with steep, straight sides, flat base – 1.4 x 1m, 0.6m deep (base at 49.25m OD). Fill of orange-brown sandy silt.
Human Remains: Burial is crouched, facing south, probable gap of 0.1m between head and west end of grave. *c* 45% skeletal recovery. Adult *c* 20–25 yr. ?Female.
Radiocarbon dating: 1930–1740 cal BC (3510±35 BP; SUERC-40720).

Grave 246134 (Burial 246136)
Fig 2.17
Grave: NW–SE, sub-rectangular with steep, straight sides, flat base – 1.7 x 1.07m, 0.5m deep (base at 49.4m OD). Fill of brown sandy silt loam.
Human Remains: Burial is crouched, facing south-west, probable gap of 0.2m between head and north-west end of grave. *c* 80% skeletal recovery. Subadult/adult *c* 16–19 yr. ?Female.
Grave Goods:
ON 2262 Pin, Cu alloy, 5 fragments.
ON 2266 Button, amber, in 2 pieces, found below right shoulder.
Pot, Triple Food Vessel (miniature), decorated.
Radiocarbon dating: 1930–1740 cal BC (3505±35 BP; SUERC-40721).

Grave 246139 (Burial 246141)
Fig 2.17
Grave: ENE–WSW, oval with moderate, concave sides, irregular base – 0.78 x 0.54m, 0.19m deep (base at 49.64m OD). Fill of mid-orange-brown sandy silt.
Human Remains: Burial position not known, probable gap of 0.1m between head and west end of grave. *c* 20% skeletal recovery. Infant *c* 10–12 mth.
Grave Goods:
ON 4079 Unidentified, Fe, small rod fragment. Likely to be intrusive.

Grave 302082 (Burial 302083)
Grave: E–W disarticulated remains in ring-ditch.
Human Remains: 10 fragments. Adult > 18 yr. ?Male.

Unaccompanied inhumation burials

North of ring-ditch 194137 in Zone 21 was a group of six unaccompanied inhumation burials that lay in a line on a NE–SW alignment, which may have continued beyond the northern limit of excavation (Fig 2.14). None of the burials intercut, and another burial (220053), in grave 220051, lay approximately 2m to the north-west (see Fig 3.20). This latter burial, of an adult, probably female, had been placed on their left hand side facing west, and was radiocarbon dated to 2130–1890 cal BC (3625±35 BP: SUERC-40718), placing it in the Early Bronze Age. However, one of the burials in the line produced a Late Bronze Age radiocarbon date and, therefore, this group of six is described and discussed further below.

A further grave (125220) lay 10m to the south-west of the inhumation burial group (see Fig 3.17). It had been disturbed by badgers but contained the cremation burial of an 8–9 year old, placed within a Middle Bronze Age urn along with a token deposit of remains from another individual. Bone from cremation burial 125220 gave a radiocarbon determination of 1640–1460 cal BC (3280±30 BP: SUERC-40280), placing it in the Early–Middle Bronze Age and broadly confirming the ceramic dating. The grave appeared to be part of the same alignment as the inhumations noted above, although this may be a coincidence. It has a substantially later date than burial 220053 (see above), but is certainly earlier than at least one of the (Late Bronze Age) burials forming the alignment.

Grave catalogue

Grave 220051 (Burial 220053)
See Fig 3.20
Grave: NNE–SSW, sub-rectangular with steep straight sides, concave base – 1.62 x 0.85m, 0.32m deep (base at 46.98m OD). Fill of mid- to dark brown sandy silt, occasional chalk inclusions.
Human Remains: Burial is flexed, facing west, probable gap of 0.1m between head and south-west end of grave. *c* 85% skeletal recovery. Adult *c* 25–30 yr. ?Female.
Radiocarbon dating: 2130–1890 cal BC (3625±35 BP: SUERC-40718).

Grave 125220 (Burial 125222/3)
Not illus
Grave: Sub-circular with moderate concave sides, concave base – 0.72m diameter, 0.65m deep. Badly disturbed fill not recorded.
Human Remains: Urned cremation burial. 195.2g cremated bone. Juvenile *c* 8–9 yr.
Grave Goods:
ON 2204, bipartite urn.
Radiocarbon dating: 1640–1460 cal BC (3280±30 BP: SUERC-40280).

Pit 171252 (Fig 2.14) was in an area seemingly devoid of archaeological features in the far north of Zone 21. It measured 0.94m in diameter and 0.34m in depth and had moderate, irregular sides and a concave base. Its single fill contained burnt, 37 pieces of worked flint of probable Neolithic date and 90 sherds (178g) of Early Bronze Age

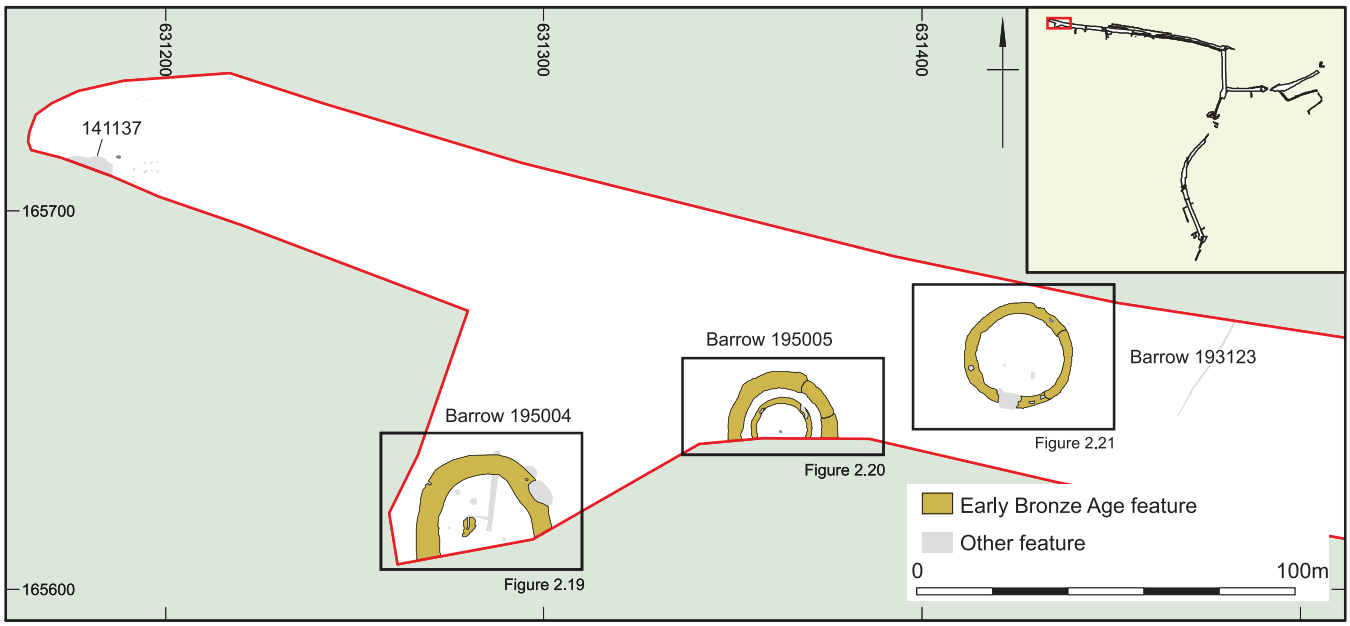


Fig 2.18 Plan of Early Bronze Age barrows 195004, 195005 and 193123 (Zone 23)

pottery (Collared Urn). The isolated position of this feature makes interpretation difficult, but the pottery may be from domestic refuse deposition; there is no human bone to indicate a funerary association.

Zone 23

Three barrows in Zone 23 appear to have formed part of a small group (Fig 2.18), with three or possibly four others approximately 100m to the north outside the EKA2 corridor (Pl 2.19; see Fig 2.22). All of the ring-ditches were distinguishable as cropmarks, and the excavated examples lay between 40m and 50m apart, on an ENE–WSW alignment. Zone 23 lies towards the west end of the Chalk ridge formed by Thorne Hill and Telegraph Hill, which at 55m is the highest point in Thanet. The barrows in this location, on the south-west-facing slope and close to the summit of Telegraph Hill, would have commanded an extensive vista south across the former Wantsum Channel and been visible against the skyline from the lower land to the south.

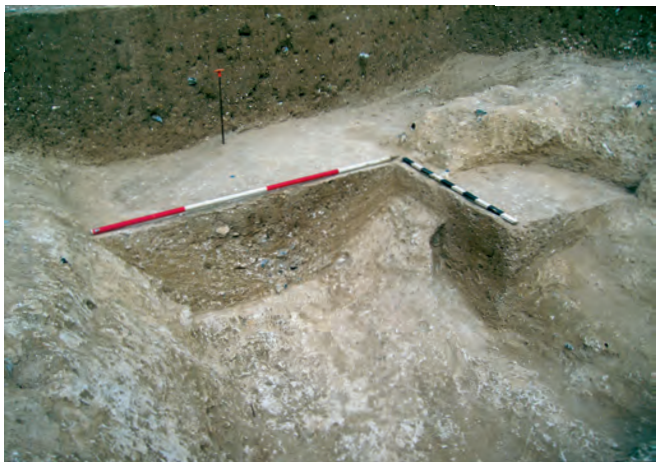
Two of the barrows (195004 and 193123) cut earlier pits, although the dating of these pits is somewhat problematic. Two large pits (198189 and 198145) up to 2m across and 1.5m deep pre-dated ring-ditch 195004, cut by its north-eastern side (Fig 2.19; Pl 2.20). Both had steep, in places slightly undercutting sides and flat or undulating bases. The complex sequences of laminar fills of mainly yellowish brown clayey silt are difficult to understand, other than as a result of natural weathering and erosion of the pit edges, and the function of the pits remains enigmatic. Pit 198189 contained anthropogenic material, although the pottery, all from the uppermost fills, was Middle or Late Iron Age in date and must have been intrusive (or indicates that the pits were only partially filled when the ditch was dug and survived as shallow hollows); a pin (ON 909) is dated to the Late Bronze Age (Fig 3.3). Neolithic flint blades and flakes were also recovered. A posthole cut the fills of pit 198189 and a further group of five (including 198146 and 198149) cut the fills of pit 198145 (angled with the postholes sloping down to the north-east), though these were not dated and their extent and purpose in unclear. The location of these features on the north-east side of the ring-ditch may be significant, for although this ring-ditch does not appear to have been an adaptation of an earlier monument, where this was the case, in two barrows to the east (193123 and 195005), the earlier entrances/causeways were on this side. As mentioned above, the possibility that these pits are Mesolithic in date cannot be excluded. Pits 290206, 290306 and 290449 pre-dated ring-ditch 193123 and all lay in the south-west quarter, almost completely truncated by the ditch (see Fig 2.21). They were smaller than pits 198145 and 198189 cut by ring-ditch 195004, and their fills contained nothing except for three worked flint flakes of probable Neolithic date.

The earliest phases of barrows 195007 and 193123 are thought to comprise large penannular ditches, both with entrances facing north-east, that were later modified to create ring-ditches, all of this construction most likely being undertaken in the Early Bronze Age period.

Barrow 195004

The northern two-thirds of this barrow lay within the excavated area, with the remainder outside to the south (Fig 2.19). An evaluation trench was hand-dug across the northern part of the ring-ditch in 2004, as part of the Minster Services excavations, although the bottom of the ditch was not reached, and limited excavation was also undertaken within the interior, which suggested that some mound material might survive (Canterbury Archaeological Trust 2004; Gollop and Mason 2006). Subsequently, the evaluation trench was backfilled, the entire area covered with plastic and soil placed on top, as this area was to be excluded from the proposed new development.

Pl 2.19 Early Bronze Age barrows 195004 (bottom left), 195005 (centre) and 193123 (upper right) (Zone 23 view from south)



Pl 2.20 Early Bronze Age barrow ditch 195004 left and pit 198111/198145 right (Zone 23; view from south-west)

In 2010 as part of the EKA2 investigations, the soil and plastic were removed, the evaluation trench re-excavated and recorded to the base of the ditch, and two further sections dug across the north-east and west sides of the ring-ditch. Following completion of these sections, and investigations within the interior, the area was carefully backfilled and the remaining archaeological deposits preserved *in situ* beneath the formation level for a new access road. New services were laid through already excavated areas or re-routed to avoid surviving archaeological deposits.

Barrow 195004 measured approximately 30m in diameter. The ditch was 4–6m in width and 1.55–1.8m deep (Pl 2.21). The inner profile of the ditch had a slightly shallower, more even gradient than the outer, particularly at the top where more erosion of the edges had occurred, and the base was flat and approximately 1m in width. A complex sequence of fills were identified, of a generally consistent nature around the ditch, with no distinct tipping lines to indicate the direction of infilling or attest to the presence of a bank or inner mound. There was more chalk towards the base, concentrated on the inside, but this may simply reflect the greater degree of erosion around the inner face of the ditch Artefacts recovered from the ditch included the fragmentary remains of a Late Bronze Age jar from the upper fills of the north-eastern ditch section and another from the west side. The pottery shows that the ditch remained partly open in the Late Bronze Age, and a Roman coin (from the uppermost part of the top fill) and later prehistoric and Roman pottery found in the upper fills show that the ditch was still extant, even if only as a shallow hollow, into the Roman period. Other material recovered from the upper fills of the ditch includes small quantities of animal bone and shell, suggesting that food waste was deposited in the ditch throughout the later period of infilling. There is some evidence for recutting of the ditch

Pl 2.21 Early Bronze Age barrow ditch 195004, typical fill sequence (Zone 23; view from south)

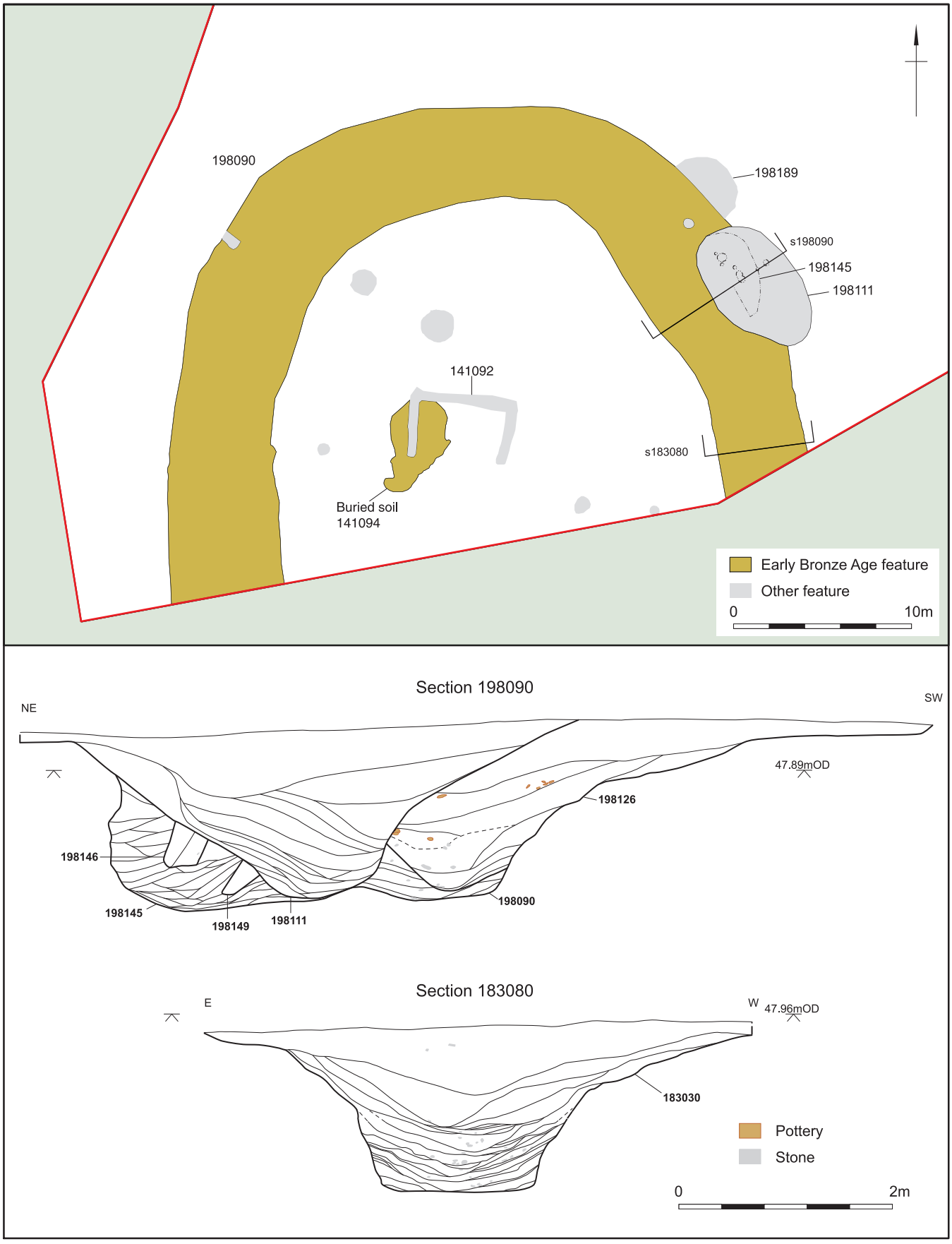


Fig 2.19 Plan and sections of Early Bronze Age barrow 195004 (Zone 23)

Pl 2.22 Early Bronze Age barrow ditch 195004, juxtaposition of ditch left and pits 198145/198111 and 198189 right (Zone 23; view from south)

on the north-east side, represented by later cut 198126 after ditch 198090 had become partially infilled, and in the same area was a more substantial later feature (198111) that appears to have cut both after they had become completely infilled (Pl 2.22). Possible recut 198126 can most likely be assigned to the Early Bronze Age, but feature 198111, which was probably a large pit, may have been considerably later, the pottery suggesting a Middle–Late Iron Age date, with a small quantity of Roman pottery from the uppermost fill.

No graves were found within the exposed part of the central area enclosed by the ring-ditch and there was no surviving evidence for a mound. It is likely that continued medieval and later ploughing would have removed any remains of a mound. However, across part of the central area were the remnants of a buried soil horizon (141094), up to 0.16m in depth and presumably once sealed beneath the mound, which contained a mixed assemblage of finds of various dates including a Neolithic leaf-shaped arrowhead and a few sherds of intrusive post-medieval pottery.

Barrow 195005

This barrow had a large, outer ditch (195007) and a smaller inner one (195006) (Fig 2.20; Pl 2.23). Test pits dug in advance of machine stripping indicated that no extant mound material survived. Initially, 50% of the outer and inner ditches were excavated by continuous running sections of offset quadrants. Following completion of these sections, a further 10% or more of the fills of both ditches was removed, and the remaining archaeological deposits preserved *in situ* beneath the formation level for a new access road (which also crossed barrow 195004).

The outer penannular ditch (195007) had a north-east-facing entrance. This ditch (Fig 2.20; Pl 2.24) was 25m in diameter, up to 4m wide at the top and 2m wide at the base, between 1m and 1.3m in depth, and had a symmetrical profile. The terminals were well defined, one with an almost square end and the other more rounded, and formed an entrance 10m in width. The sequence of fills showed little evidence of an

Pl 2.23 Early Bronze Age barrow ditch 195005, inner ditch left, outer ditch right, with early terminal in foreground and shallow, later cut beyond (Zone 23; view from south-east)

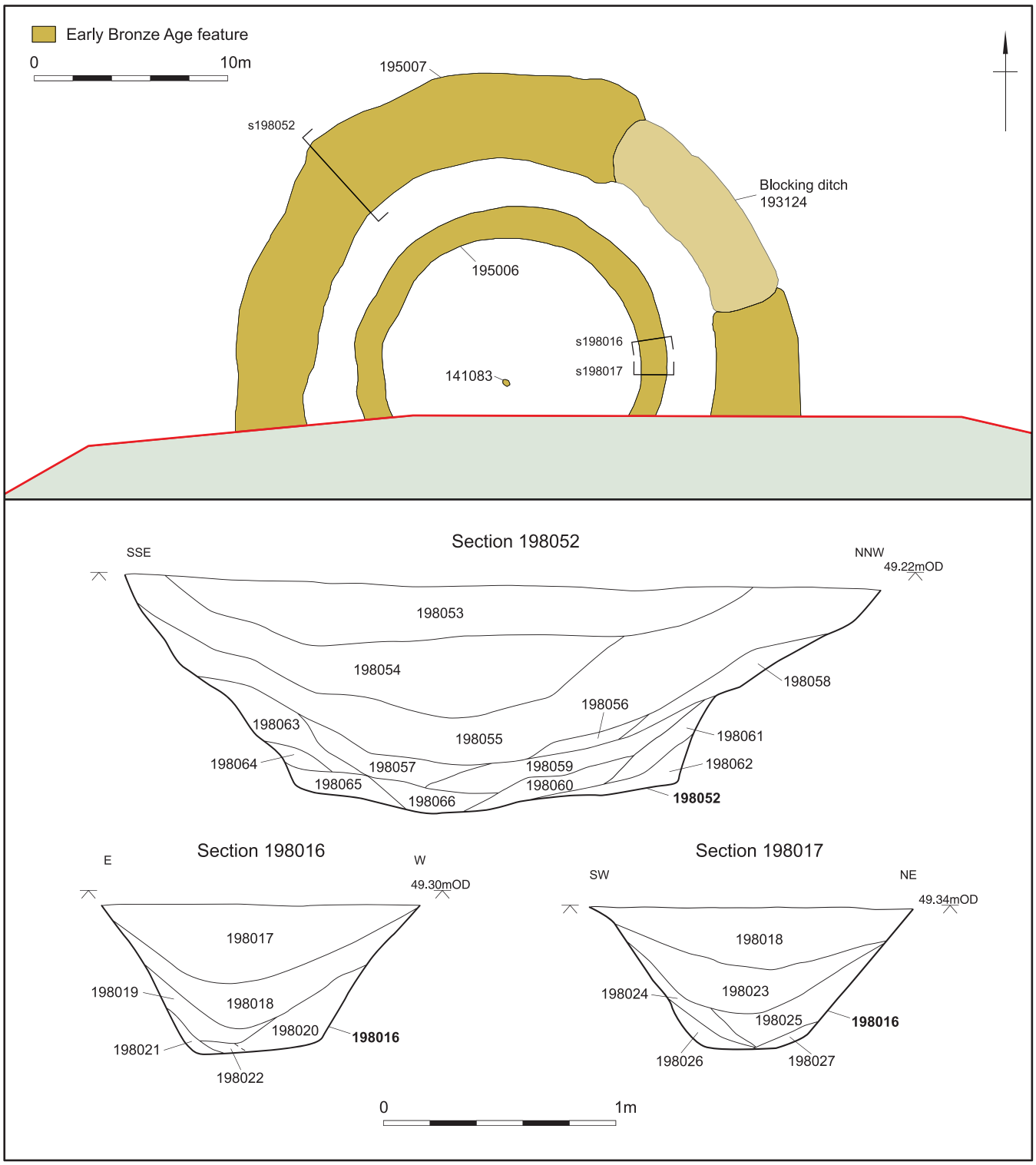
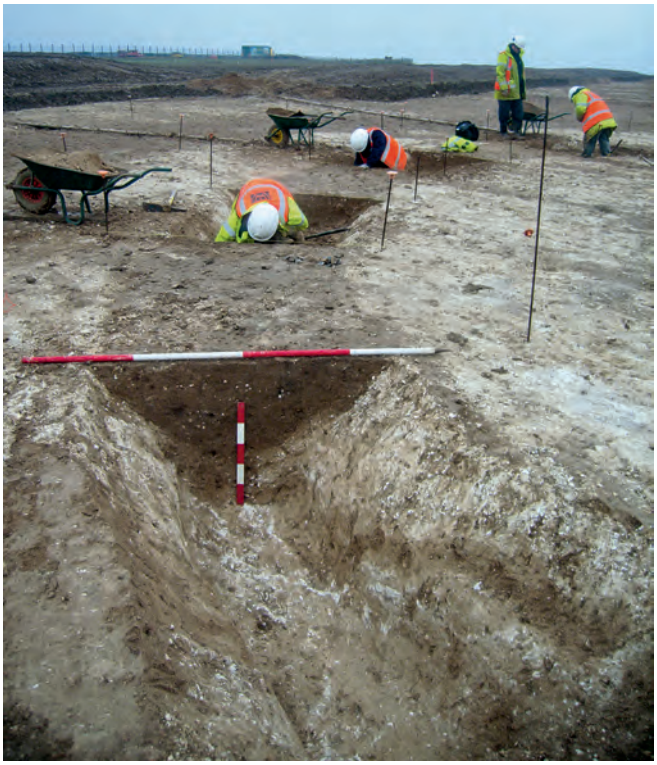


Fig 2.20 Plan and sections of Early Bronze Age barrow 195005 (Zone 23)

internal mound though the lower fills contained more chalk, some at least derived from erosion of the ditch sides. Above this were several substantial, generally homogeneous layers of brown silty soil (eg, 198053–5), likely to reflect a prolonged period of natural infilling from early in the Iron Age (see below). The finds from the ditch ranged greatly in date and were not useful in dating its construction. Neolithic and Bronze Age flint and a single sherd of Beaker pottery were found in the upper fill, but no material of this date was found in the lower fills and other pottery, mainly from the upper fills, ranged in date from the Middle Bronze Age to Roman, indicating that the ditch was still open throughout this period, albeit perhaps only as a relatively shallow hollow. The remains of a pot (ON 910), dated to the Early–Middle Iron Age, were found 0.15m from the base of the ditch on the north-west side, placed upright. There were no signs of a cut containing the vessel and no human remains or other finds were associated with it. The pot appeared to be sealed beneath layer 198055, which is thought to represent Iron Age silting of the ditch.

Pl 2.24 Early Bronze Age barrow ditch 195005, typical fill sequence in outer ditch, with early terminal in foreground (Zone 23; view from north)



Pl 2.25 Early Bronze Age barrow ditch 195005, typical fill sequence in inner ditch (Zone 23; view from south-west)

There is no evidence for the ditch having been recut or cleaned out when the opening in the penannular ditch was closed by the digging of ditch 193124 between the two terminals. This ditch was also approximately 4m wide but was much shallower, only 0.6m deep and the northern end appeared unfinished. The ditch contained only a tiny amount of fired clay and some animal bone.

The inner ring-ditch (195006) (Fig 2.20; Pl 2.25) was 14m in diameter, up to 1.5m wide and up to 0.6m deep. The base of the inner ring-ditch was consistent with the level at which there was a change in the natural from a more friable, weathered chalk to the lower solid chalk. Nearly all the finds came from the middle and upper fills. These included Neolithic worked flint and Bronze Age pottery but also the fragmentary remains of an Early Iron Age cup, suggesting that the ring-ditch had largely been infilled by this period.

In the centre of the ring-ditch was a small grave (141083) containing the cremation burial of a subadult (141084) which was dated to 1730–1520 cal BC (3340±30 BP: SUERC-40281), placing it in the Early Bronze Age.

There is no direct evidence for the order in which the different elements of the monument were built. The larger, penannular, ditch might represent the first phase with the digging of ditch 193124 representing a second phase during which the inner ditch was added. An alternative sequence is that the inner ring-ditch and the central burial represent the first phase to which the outer penannular, ditch was added subsequently and it was later converted to a ring-ditch by the addition of ditch 193124.

Grave catalogue

Grave 141083 (Burial 141084)

Not illus

Grave: Sub-circular with moderate straight sides, concave base – 0.41 x 0.26m, 0.16m deep (base at 48.91m OD). Fill of mid-brownish grey sandy silt, moderate chalk and charcoal inclusions.

Human Remains: Unurned cremation burial. 42.2g cremated bone. Subadult *c* 14–15 yr.

Radiocarbon dating: 1730–1520 cal BC (3340±30 BP: SUERC-40281).

Barrow 193123

The penannular ditch (195070) of this barrow (Fig 2.21; Pl 2.26) was 24m in diameter, 2.5m wide at the top, 1m wide at the base, and 1.3–1.45m deep. There was an approximately 20m wide, entrance on the eastern side. There was some indication that the lower fills accumulated from a predominantly external position, which suggests the possibility of an outer bank, though the evidence remains equivocal, and the distribution of eroded chalk in the fills provides no clear clue in this respect. Test pits dug in advance of machine stripping indicated that no mound material survived.

A large amount of flint working debris was found in the ditch predominantly in the west side, opposite the entrance. The quantity of flint (1685 pieces) was greater than in any ring-ditch on the EKA2 and included material in fresh condition on the base of the ditch indicating that at least some of the flint working took place shortly after the monument was built (Vol 2, Harding, Chap 5). Worked flint continued to be incorporated into the basal and lower ditch fills, presumably as a result of weathering and erosion around the outer lip of the ditch (Pl 2.27). However,

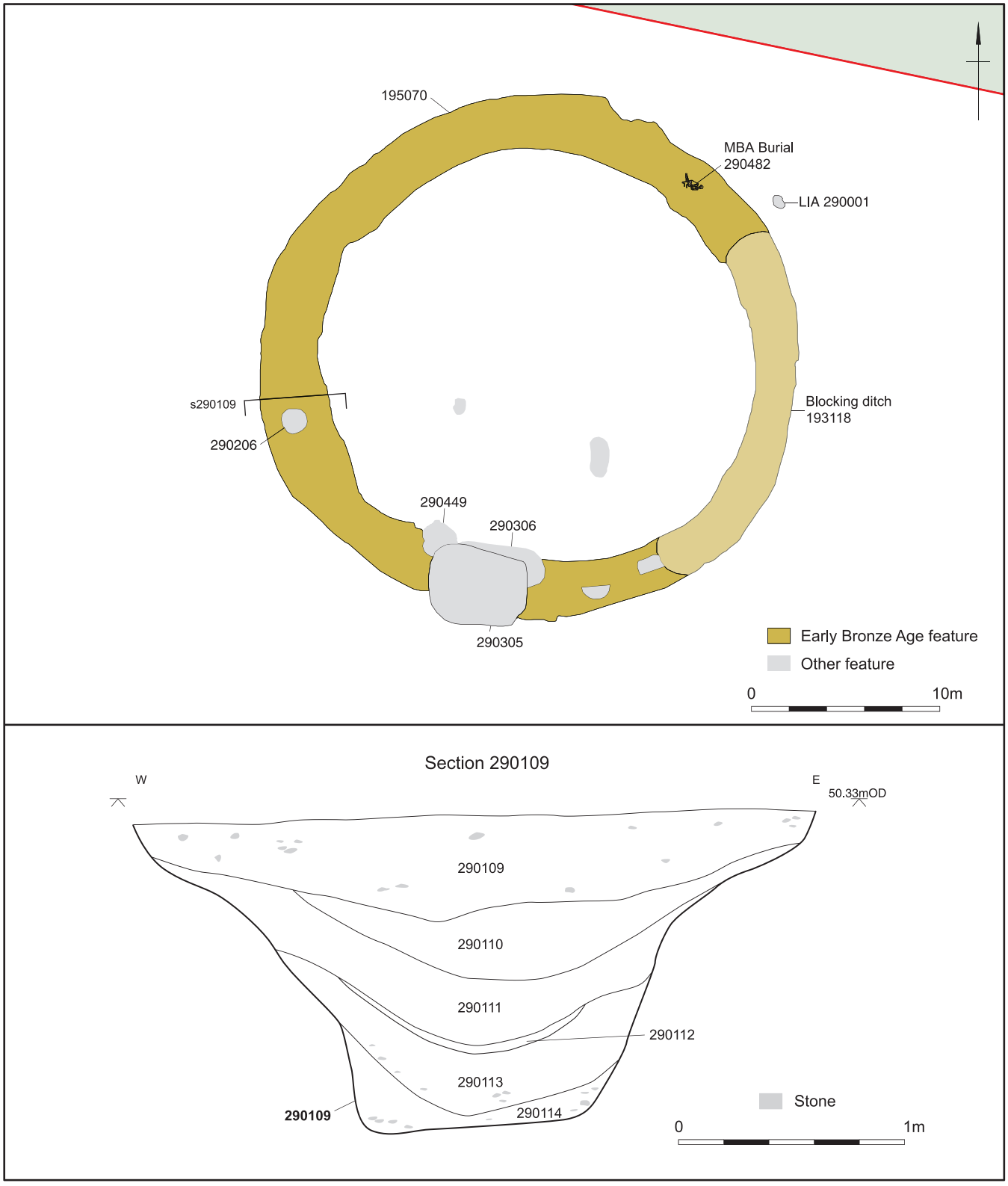


Fig 2.21 Plan and section of Early Bronze Age barrow 193123 (Zone 23)

there is evidence for renewed procurement and knapping activity, with deposits of waste higher up in the basal/lower fills, perhaps contemporary with the conversion of the penannular ditch to a ring-ditch (see below); a further deposit of worked flint (63 pieces) came from the 'blocking ditch' on the east side which marked this conversion. The earliest pottery from the ditch was Middle Bronze Age, from a middle fill, whilst the middle and upper ditch fills (to a depth of 0.75m) produced a small quantity of Iron Age and Roman pottery. Other material from the upper ditch fills included a modest amount of animal bone and part of a copper alloy sheet (ON 921) possibly of Roman date.

The penannular ditch was later recut and converted into a ring-ditch by digging a further length of ditch (193118) between the two terminals on the east side (Pl 2.28). Ditch 193118 was 0.7m in depth, about half the

Pl 2.26 Early Bronze Age barrow 193123, nearing completion of excavation; note shallow, later cut to left (Zone 23; view from north-east)

depth of the earlier ditch, perhaps indicating that the ditch was only cut to the level to which the existing part had already become infilled. The small amount of pottery recovered dated to the Middle to Late Bronze Age, indicating perhaps that the modification dated to this period or earlier. This ditch also produced a moderately large assemblage of worked flint, but it could only be assigned a broad prehistoric date.

No graves or contemporary features were found within the interior of the ring-ditch but an inhumation burial (290482) was inserted into the ditch on the north-east side (Fig 2.21). It appears to have been placed in a shallow depression at a depth of approximately 0.8m in the middle-upper ditch fill and then covered over rather than in a deliberately excavated grave (Pl 2.29). Burial 290482 was radiocarbon dated to 1610–1410 cal BC (3210±35 BP: SUERC-40723), placing it in the Early–Middle Bronze Age (see Chap 3, Table 3.3).

Pl 2.27 Early Bronze Age barrow ditch 193123, typical fill sequence, with early terminal in foreground (Zone 23; view from north)

Grave catalogue

Grave 290481 (Burial 290482)

See Fig 3.13

Grave: From fill of ring-ditch, cut not discerned.

Human Remains: Burial is supine, facing east. *c* 85% skeletal recovery. Adult >55 yr. Female.

Radiocarbon dating: 1610–1410 cal BC (3210±35 BP: SUERC-40723).

Pl 2.28 Early Bronze Age barrow ditch 193123, typical fill sequence in shallow, later cut, with early terminal in foreground (Zone 23; view from north-west)

Pl 2.29 Early/Middle Bronze Age burial 290428 in upper fill of barrow ditch 193123 (Zone 23; view from south)

Bronze Age landscape and landuse

by A P Fitzpatrick

Although regional pollen sequences suggests a significant reduction in woodland in the Late Neolithic and Early Bronze Age and a corresponding increase in taxa associated with cultivation, grassland and scrubby lands or hedgerows, almost the only evidence for the Early Bronze Age environment from the EKA2 comes from the funerary monuments on the Chalk ridge. It is clear from the soil micromorphology (Vol 2, Macphail and Crowther, Chap 20) that the monuments in Zone 23 at least were built in pasture and they were prominent features in the landscape. In contrast, evidence for where the people who were buried in these monuments lived is, as in the Middle and Late Neolithic periods, all but absent.

Settlement

There is little evidence for Early Bronze Age settlements from either EKA2 or from the large excavations at Thanet Earth (Rady 2010, 5) and this seems to be as typical of Kent (Garwood 2011) as it is of the rest of southern England where settlements seem to have been short-lived and left few immediately recognisable traces (Brück 1999). This rarity of evidence is a striking contrast with the large number of contemporary funerary sites.

Most of the few possibly settlement-related finds from the current project are single sherds that are residual in later features. The exception is a poorly-dated curvilinear enclosure in Zone 10 that may be Early Bronze Age in date (Fig 2.9; Pl 2.8). Not all of the enclosure lay within the excavated area but ditch 194091 described an irregular oval, 25m across. There were no settlement-related features inside the enclosure. No finds came from the lower fills of the enclosure ditch and the secondary fills contained material of Neolithic to Late Iron Age or early Roman date. Two features that cut the enclosure ditch contained Beaker pottery (194101 and 227010), and one of these, 194101, may have been part of a Middle Bronze Age field system. This suggests that the enclosure dates to either to the Late Neolithic or the Early Bronze Age.

The ditch is about the same size as those of the Early Bronze Age ring-ditches found in the scheme, 2m wide and 1m deep, but it may be compared with the ovoid enclosure at Laundry Road, Minster, south of Zone 21 and towards the western end of the chalk ridge (see Fig 3.60). This enclosure was discovered by aerial photography and though it has only been evaluated, Beaker pottery and a barbed and tanged arrowhead were found in the enclosure ditch (Boast and Gibson 2000, 361–3, fig 4). It is not known if the enclosures had a domestic, agricultural or some other function.

The other possibly settlement-related evidence of Copper Age/Bell Beaker date from the scheme is represented only by scraps of pottery. A sherd of abraded Beaker pottery was found in an Iron Age pit (295010) in Zone 7 and its horizontal comb decoration suggests a date in the last quarter of the 3rd millennium BC, probably before the full Early Bronze Age. In Zone 8 a sherd possibly from a Beaker was found in the upper fill of the northern ring-ditch (144097) and in Zone 12 two typologically later Beaker sherds were residual in Iron Age ditch 190192. Another typologically late sherd, with panels of decoration, came from Early Bronze Age ring-ditch 195005 in Zone 23 and this hints at activity, though not necessarily funerary in character, in the centuries before the ring-ditch was built.

There is even less evidence for material certainly of Early Bronze Age date. A number of thumbnail scrapers from Zone 14 could be of this date but arguably the best evidence for settlement at this time comes from a pit (171252) in Zone 21 (Fig 2.14) which contained abraded sherds of Collared Urn. The pottery might be considered to derive from funerary contexts were it not for the absence of cremated bone and the presence of two flint scrapers which are common finds in domestic contexts.

Other sherds in fabrics that are typical of Collared Urns but which are typologically undiagnostic were found redeposited in Iron Age ditch 190130 in Zone 12, and in Zone 8, where they may be associated with the two ring-ditches. It is just possible that a small amber bead from Zone 12, although found in Middle Bronze Age pit 214001, is also of Early Bronze Age date and residual, perhaps from a burial that was disturbed by the later activity.

Flint working took place in Zone 21 before ring-ditch 216090 was built as debris was incorporated, apparently accidentally, in the fills of two of the graves, as well as in the ditch. This material need not indicate a settlement as no domestic debris was associated with it, rather the use of easily accessible flint. A similar scenario can be envisaged for ring-ditch 193123 in Zone 23. Here there

was much more flint waste, much of it in fresh condition, and it was found on the base of the ditch and in the lower fills. There can be no doubt that this material derives from knapping being undertaken on the western edge of the monument shortly after its construction, and on at least one occasion at a slightly later date, but probably still within the Early Bronze Age.

The rarity of settlement-related contexts means that no plant remains, charcoal or securely stratified animal bones were recovered. Virtually the only evidence for subsistence comes from the several small caches of mussel shells with occasional examples of other species that were found in the upper fills of the large Early Bronze Age ring-ditch (134096) in Zone 13.

The soil analyses of a buried soil below ring-ditch 195004 in Zone 23 indicates that the monument was built in pasture (sample 6157) and one sample (6919) from ring-ditch 193123, also in Zone 23, indicates that the area continued as chalk grassland in the years immediately following the construction of the monuments.

Burials

The Early Bronze Age evidence from the EKA2 is dominated by funerary monuments. Ten ring-ditches representing the remains of ploughed out Early Bronze Age barrows were found (see Fig 2.22). Half of these were on the Chalk ridge where a very large number of ring-ditches were already known (Perkins 2010), but examples were also found on Cottington Hill in Zone 8, the Cliffsend spur in Zone 13, and in Zone 3 on the low-lying Ebbsfleet peninsula. In addition, since the EKA2 fieldwork was completed, another ring-ditch has been revealed by geophysical survey (Wardell Armstrong 2013) immediately to the south of Zone 19, its existence previously having been hinted at by the curvilinear arrangement of Anglo-Saxon graves belonging to the 'southern cemetery' in this area. Although, with the exception of ring-ditch 134096 in Zone 13 the monuments were not large, they were all carefully sited to ensure that they were visible as possible. The monuments in Zones 3 and 13 (Pls 2.3 and 2.30) were built on knolls or promontories that were prominent in the locality. Even though the monument in Zone 3 was almost at sea level, it lay towards the end of the Ebbsfleet peninsula and would have been visible from the sea, the Wantsum Channel and the chalk ridge. The opening in the outer, penannular, ditch faced towards the central part of the Isle of Thanet, and perhaps specifically at Ebbsfleet Hill at the neck of the Ebbsfleet peninsula, and an area that in the Late Bronze Age was used for the votive deposition of metalwork. The monuments in Zone 8 were on the upper slopes of Cottington Hill and later lay to the north of the Middle Bronze Age field system, while the monuments in Zone 13 were sited on a promontory on Foads Hill, with extensive views across Pegwell Bay to the Continent. In Zone 21 ring-ditch 194137 was close to Wayborough Hill on the south side of the Chalk ridge and a short distance west of a shallow dry valley. The row of ring-ditches in Zone 23 lay on the south-west-facing slope of Telegraph Hill, close to its summit. From this location, on the highest part of the Isle of Thanet, there are extensive views across the former Wantsum Channel and the English Channel (Pl 1.4) and

Pl 2.30 Early Bronze Age ring-ditch 134100 (Barrow 2), with ring-ditch 134097/193125 (Barrow 1) middle left, with the rising ground of Foad's Hill beyond (Zone 13; view from south-east)

the barrows are likely to have been clearly visible against the skyline from the upper slopes of the ridge.

The monuments in Zones 21 and 23 were in fact just below the top of the Chalk ridge and this 'false cresting' ensured that they were as prominent as possible (Pl 2.31). The monuments would have been most visible shortly after they were built with the white chalk upcast silhouetted against the green pasture. To the north-west at Thanet Earth there were fewer ring-ditches but they also employed the same device of 'false cresting' in relation to the plateaus of the site, as do those on the higher ground to the north (Rady 2010, 1, 4).

Five of the EKA2 ring-ditches had a single ditch and five had two ditches. Where there were two ditches the

Pl 2.31 Early Bronze Age barrow 193123 (upper right); barrows 195004 and 195005 now covered by new road, but note cropmark of remaining part of 195005 in field to south (Zone 23; view from south)

Pl 2.32 Early Bronze Age barrow 195005, showing inner and outer ditches, with shallow, later (?unfinished – note small ridge of chalk remaining in situ*) cut to right (Zone 23; view from south-east)*

Table 2.2 Details of Early Bronze Age barrows on EKA2

Zone	*Barrow*	*Ditch*	*Form*	*Diameter (m)*	*Bank or mound*
3	Monument 193165	Outer: 172040 Inner: 172035/ 172039	Penannular Annular	20 8	? Probable
8	Southern Barrow	Outer: 273092 Inner: 273014	Annular Annular	17 13	No No
	Northern Barrow	Outer: 144097 Inner: 144111	Annular Annular	*c* 17 *c* 13	No No
	Barrow	165052	?	?	?
13	Barrow 1	Outer: 134097 Inner: 193125	Annular Penannular?	*c* 30 *c* 16	No No
	Barrow 2	134096	Annular	43	No
	Other	N/A	N/A	N/A	N/A
21	194137	194137	Annular	18	Yes
	216090	216090	Annular	23	Yes
23	195004	195004	Annular	30	Possibly
	195005	195007: outer 195006: inner	Pennanular Annular	25 (later annular) 14	No No
	193123	195070	Penannular	24 (later annular)	External bank?

inner one was always less substantial than the outer one (eg, 195005, Pl 2.32) but in no instance was it possible to decide if the ditches were contemporary or successive.

As Table 2.2 shows, there was considerable variability in the size and shape of the monuments. The inner ditch of Barrow 1 in Zone 13 (ditch 193125) may have been penannular but it was more common for the outer ditch to be penannular, at least initially. The outer ditches of monuments 193165 in Zone 3 and 195005 in Zone 23 were penannular as was the single ditch of 193123 in Zone 23. The circuits of the two monuments in Zone 23 were later completed by digging ditches between the terminals but it was not possible to associate this with any other remodelling of the monuments. It is possible that the inner ditch of Barrow 1 in Zone 13 was recut, perhaps in segments (Fig 2.11) but if it was, the causeway was not removed.

The ditches excavated to complete the circuits of 195005 (Fig 2.20) and 193123 (Fig 2.21) in Zone 23 were both quite shallow, suggesting that the original ditches were already partly infilled. The discovery of a Middle Bronze Age burial (290482) about half way up the fills of ditch 193123 suggests that the linking ditches were dug at about this time.

There was relatively little evidence for barrow mounds (tumps) or other features. There was some evidence for an inner bank or other earthwork in the two barrows in Zone 21 (194137 and 216090), and the inner ditch of the barrow (monument 193165) in Zone 3 may have had a bank and the outer one probably did. In contrast ring-ditch 193123 in Zone 23 may have had an external bank. It is speculated above that some of the pits within the Southern Barrow in Zone 8 (Fig 2.8) could have been Late Bronze Age settings for sandstone blocks or 'doggers', though there is no direct evidence for this.

The ten excavated ring-ditches from EKA2 provide some of the best dated examples from Thanet and in Kent as a whole (Perkins 2010, 298, app. 2; Garwood 2011, 127–9). In view of the relatively large number of Bell Beaker graves found in Thanet, sometimes as the primary central burial in ring-ditches (Perkins and Gibson 1990; Bennett *et al* 2008; Rady 2009, 22–3; 2010, 4–5; Weekes 2010, 358), their absence from the

Graves and burials	*Grave goods*	*Radiocarbon date*
No		
?	-	-
? 3.9g cremated bone in ditch	-	-
No		
No		
No		
No		
159132: cremation	-	2030–1770 cal BC
136129: inhumation	-	1900–1700 cal BC
136132: inhumation	-	1880–1660 cal BC
230115: inhumation	Gold strip, faience bead	-
230118: inhumation	-	-
240897: inhumation	-	-
203001: inhumation	-	1610–1430 cal BC
221014: inhumation	-	1530–1410 cal BC
200090: inhumation in ditch	-	1420–1220 cal BC
Skull in Iron Age square sunken-featured building 174060	N/A	1880–1680 cal BC
132095: inhumation (Central)	-	1880–1640 cal BC
132093: inhumation disturbed?	-	-
216091: inhumation (Central)	-	1930–1740 cal BC
246134: inhumation	Bronze pin, amber button, triple Food Vessel	1930–1740 cal BC
126004: inhumation	-	1960–1750 cal BC
246139: inhumation	-	-
No		
No		
141083: cremation (Central)		1730–1520 cal BC
290481: inhumation in ditch	-	1610–1410 cal BC

EKA2 is noteworthy even if the use of ditches of different forms for the barrow in Zone 3 suggests that the monument is of Bell Beaker or Early Bronze Age date.

The earliest burial is in fact an apparently isolated unaccompanied inhumation (220053, in grave 220051) in Zone 21 that dates to the 21st century BC (see Barclay and Stevens below; Table 2.4; Fig 2.26). It lay immediately to the west of a row of six graves. Although one of these was radiocarbon dated to the Late Bronze Age it is possible that some of other, undated, burials are Early Bronze Age. The next oldest Early Bronze Age burial is cremation burial 159132 in ring-ditch 134097/193125 in Zone 13. The three dated burials from ring-ditch 216090 in Zone 21 form a consistent group centred on the 19th century BC, whilst that from ring-ditch 194137, also in Zone 21, is slightly later. The two other dated burials from ring-ditch 134097/193125 are also close in date as is the human skull fragment recovered from the Iron Age sunken-featured building, and this would be consistent with the skull having derived from a grave associated with that ring-ditch. The central cremation burial of ring-ditch 195005 in Zone 23 is dated to 1730–1520 cal BC, towards the end of the Early Bronze Age. At two barrows, Middle Bronze Age burials were made in the partly infilled ditches (Barrow 2 in Zone 13 and 193123 in Zone 23).

Five barrows had certain or probable graves within the enclosed areas that are likely to be contemporary with the construction and initial use of the monuments. There were certain graves in barrows 194137 and 216090 in Zone 21 and 195005 in Zone 23. The central feature within barrow 193165 in Zone 3 is also likely to be a grave although neither a burial nor any grave goods were found. Very little of the centre of interior of Barrow 1 in Zone 13 was exposed (Fig 2.11) but eight graves lay between the two ditches, and two of them, (136129 and 136132) both of Early Bronze Age date, were cut into the inner ditch. As the entire interior of two of the other barrows was not exposed it is possible that there are graves yet to be discovered at the northern barrow in Zone 8 and 195004 in Zone 23. At the remaining three barrows it is possible that any graves were disturbed by later features; an Early Bronze Age skull was found in an

Iron Age feature within Barrow 2 in Zone 13 (Fig 2.13) though a very small quantity of disarticulated bone in its lower fills could conceivably have derived from the burials in ring-ditch 134097/193125. However, disturbance by later features does not seem a probable explanation for the apparent absence of a grave in Barrow 193123 in Zone 23.

While it is possible that not all of the ring-ditches contained burials, it is perhaps more likely that cremation burials in shallow graves have been destroyed by cultivation and some details point to this. In Zone 23 the surviving depth of the central grave in the barrow immediately to the west of barrow 193123 was only 0.16m (Barrow 195005). In Zone 21 the second possible inhumation grave in Barrow 194137 was little more than a shallow scoop (132093) containing disarticulated human bones, suggesting that it had been disturbed. Although no graves were discovered in the Southern Barrow of Zone 8, a very small quantity of cremated human bone (just 3.9g) was found in the outer ditch. That remains from two individuals are present in this tiny quantity of bone would suggest that cremation or burial took place in the vicinity of the monument. A few sherds from Zone 8 were identified as being from Collared Urns on the basis of their fabric and it is possible that these were also associated with the use of the monuments. At Monkton there were only burials in two of the ten ring-ditches excavated, some of which are of Middle Bronze Age date (Bennett *et al* 2008, 21–46).

The number of Early Bronze Age burials from EKA2 (Tables 2.6–7) is too small to say much about either demography or burial rites. However, females and males are present in equal proportions and all ages, including children and infants are represented. The two Early Bronze Age inhumation burials associated with ring-ditch 134097/193125 are both certainly, or probably male, though the slightly earlier cremation burial may be that of a female. The burials associated with ring-ditch 21690 in Zone 21 were all female. The earliest two inhumation burials were placed on their left hand side and the subsequent two on the right hand side. The adult whose cranium was found in an Iron Age context in Zone 13 had been killed by a sharp weapon. While the sample is too small to say whether these associations and patterns are meaningful, it is noticeable that none of the ring-ditches appear to have been used for burial for more than three generations. As discussed further below it is clear that some of the individuals were of high social status.

The ring-ditches excavated in the current project form part of one of the densest concentrations of such monuments anywhere in Britain (eg, Field 1998; Needham *et al* 2006, 49; Perkins 2010, 291). Most of the ring-ditches have been identified by aerial photography and the actual number of these monuments, which are often found in clusters, was, and is, undoubtedly greater than that identified from the air. For example, only one of the three ring-ditches found in Zone 21 had previously been identified.

These monuments on Thanet are complemented by a concentration of ring-ditches on the North Downs of the mainland; a group termed the 'Sutton Barrow Landscape' by Perkins. There are fewer ring-ditches in this group and single examples comprise a greater proportion of finds than in Thanet. On Thanet the ring-ditches are found singly, in small groups (<10) and in larger cemeteries (Moody 2008, 93–4, fig 45). Cumulatively these groupings can combine to form what have been termed 'super-cemeteries' (Perkins 2010, 286). The ring-ditches in Zones 21 and 23 are found along a length of 1km (Fig 2.22) and they belong to Perkins' Monkton–Minster 'super-cemetery' which is some 4 km long and runs along the Chalk ridge (Perkins 2010, 284, 291, fig 3). Although there will be some variation in the visibility of individual monuments on air photographs because of local changes in geology and other conditions, this 'super-cemetery' contains at least 87 ring-ditches (though some of the smaller ones are possibly Anglo-Saxon) and their arrangement reflects to some extent the ridge line and the various small hills and promontories along this, though the linear arrangement of barrow cemeteries is well known (eg, Garwood 2007, 37–42). The ring-ditches in Zones 13, and possibly 8, fall within Perkins' Ozengell–Pegwell 'super-cemetery.'

Several individual ring-ditches have been partly excavated recently in the east of Thanet as a result of urban expansion, for example at East Northdown and Hartsdown Community Woodland in Margate (Smith 1987; Perkins 1996, site 2, 279–80, fig 2) and Bradstow School, Broadstairs (Diack 2005; Hart and Boast 2007, 423–4). The possible external bank of ring-ditch 193123 in Zone 23 would find a parallel at East Northdown, Margate (Smith 1987). The major excavated groups are all close to EKA2 at Lord of the Manor (Trust for Thanet Archaeology 2008b) and Cliffs End Farm (McKinley *et al* 2013, 157, fig 6.2), both close to Zone 13, and at Monkton 2 km west of Zone 23 (Bennett *et al* 2008). Part of a small group and some isolated examples were also excavated at Thanet Earth, Monkton (Rady 2009, 18; 2010, 1–4; Weekes 2010, 358).

The Lord of the Manor and Cliffs End Farm ring-ditches comprise small groups (Table 2.1), as do most of the examples from the current scheme. There are two, just possibly three, in Zone 8 where the outer ditch of the Northen Barrow in Zone 8 ditch cut a curving ditch 165052 of similar size (Fig 2.8) and it is possible that this was part of another ring-ditch, possibly a conjoined one. If it was, it could have been penannular and open to the north-east as a return of ditch 165052 was not identified. There were also two barrows in Zones 13 and 21 and three in Zone 23. The ones in Zone 23 form a clear row (Fig 2.18), though this does not necessarily represent a chronological sequence. Only the ring-ditch in Zone 3, which occupies a locally prominent position, can be shown to be a singleton (Fig 2.6).

The ring-ditches from the scheme offer some light on the origins of the sequence of Thanet ring-ditches and barrows. It has often been suggested that this lies in the Late Neolithic and that the primary function of these monuments was not funerary (eg, Perkins 2004; 2010, 283; Moody 2008, 73). This interpretation, which

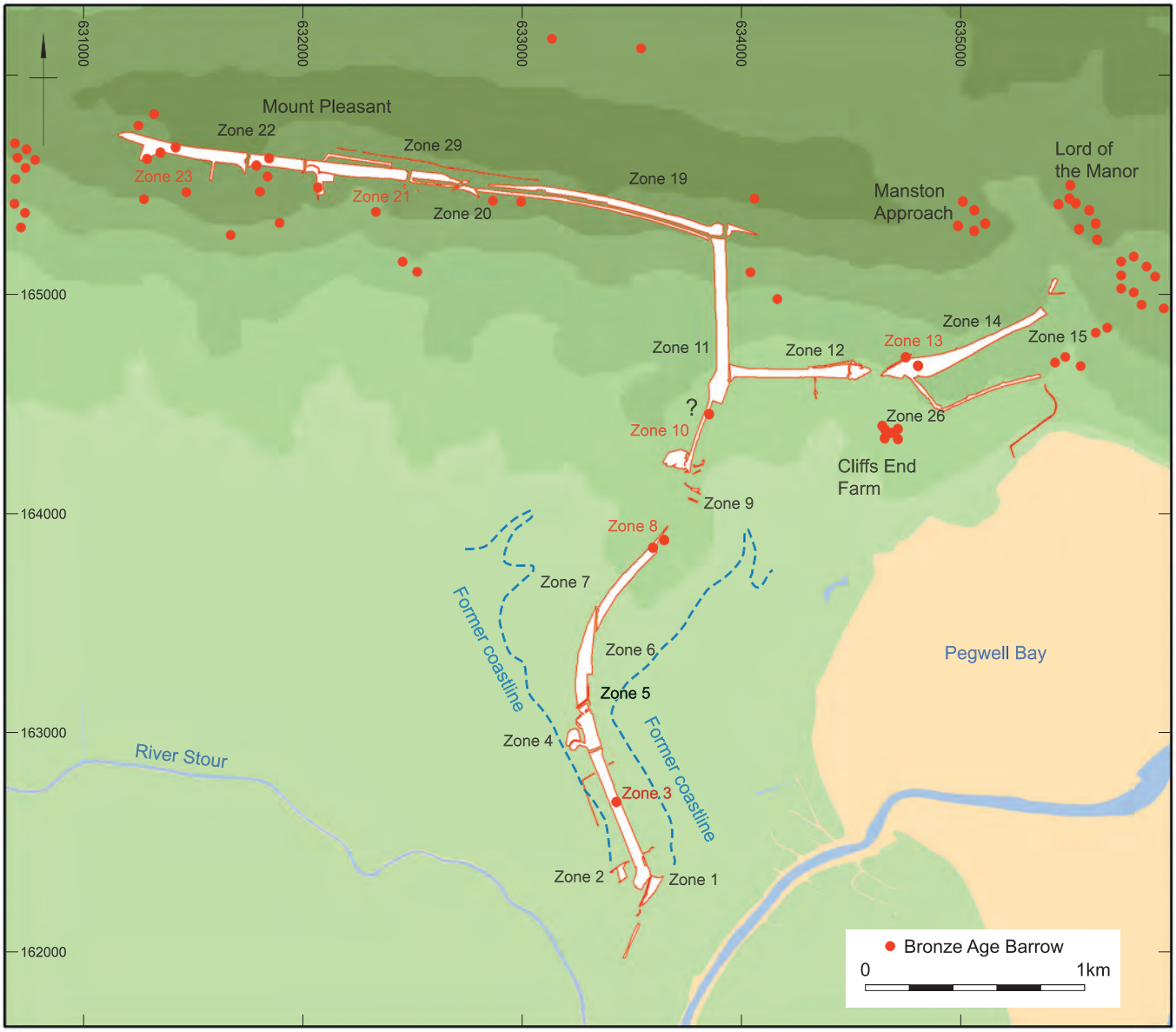


Fig 2.22 Distribution of Early and Middle Bronze Age barrows/ring-ditches along the EKA2 route in relation to other groups of ring-ditches recorded from cropmarks and excavations in the vicinity

derives from the results of the excavations at Lord of the Manor and South Dumpton, may be challenged.

The Lord of the Manor group of ring-ditches includes single and multiple ditched monuments that are mainly annular, with two penannular examples. The Late Neolithic dating of the monument sequence at the Lord of the Manor is based on a few small sherds of Grooved Ware from ring-ditch I. The ditches were recut and reworked after they had filled in and Beaker pottery was associated with this activity. The ditches of the South Dumpton Down 'oval' barrow are segmented but the three radiocarbon dates from the burials fall in the Early Bronze Age (2140–1890 cal BC, 3630±45 BP, BM-2975; 2100–2080, 3560±50 BP, BM-2940; and 1965–1740 cal BC, 3520±40BP, BM-2864 at 95% confidence) and the associated pottery is Beaker and Food Vessel. The ascription of these monuments to the Late Neolithic is based on the presence of penannular ditches which are a feature of Class I henges, the occurrence of oval barrows in the Neolithic, and the presence of Grooved Ware and Beaker pottery. The burials are suggested to represent a change in the use of the monuments.

However, oval barrows usually date to the Middle Neolithic and penannular and segmented ditches are not restricted to the Neolithic, they occur around Bell Beaker and Bronze Age graves (*cf* Garwood 2011, 129–30), including well-dated examples on Thanet. Although the earliest Bell Beaker burial currently known on Thanet, from Ramsgate, was not surrounded by a ring-ditch (Hart and Moody 2008), it is clear that ring-ditches came into use shortly after this (Rady 2009, 22). Grooved Ware has not been found in any other of the 20 or more ring-ditches excavated on Thanet since those at the Lord of the Manor, and the small size and number of sherds from the Lord of the Manor site are such that they could easily be residual from earlier activity. This suggests that most of the ring-ditches currently known from Thanet, whether annular or penannular, probably first appeared in the later 3rd millennium BC when Beaker pottery was current, perhaps around the 23rd

century BC, and this is consistent with evidence elsewhere (Garwood 2011, 129). Depending on whether it is decided to attribute Beaker pottery to the Late Neolithic as opposed to a Chalcolithic or Copper Age (eg, Sheridan 2008; Allen *et al* 2012), these small monuments can be described as Late Neolithic but they have little in common with henges even if the period of their construction partly overlapped.

Even if the suggested Late Neolithic origins of the Thanet ring-ditches is questionable, the very large ring-ditch 134096 (Barrow 2) in Zone 13 appears to have recut an earlier but undated ditch that had at least one terminal and which can be tentatively compared to a henge. With an external diameter of 43m and, in particular, a ditch that was slightly over 3m wide and over 1m deep, the reworking of this monument was on a different scale from that involving the smaller ditches of the Lord of the Manor. As noted above, it is more comparable with the transformation of the Ringlemere henge on the other side of the Wantsum Channel where the addition of an internal mound effectively created a large penannular ditched barrow (Needham *et al* 2006). The external diameter of the penannular ditch was 50m and large quantities of Grooved Ware were found.

However, rather than having started as a henge, Barrow 2 may always have been a large round barrow (leaving aside the different types such as disc barrows) and the absence of Late Neolithic finds could be because of the date of the monument. If Barrow 2 were to be Early Bronze Age in origin, this could date to an advanced stage of the Early Bronze Age as there is a clear trend for single phase round barrows to increase in size over time (Garwood 1989, 290–2, table 9.10; 2007, 36–7; 2011, 130), and while 134096 is large, it is not significantly larger than some of the other ring-ditches on Thanet (Perkins 2004, 76) and much larger barrows are known elsewhere (Ashbee 1960, 24). A number of other large circular monuments have been identified from aerial photographs on Thanet (Needham *et al* 2006, 47–9) and it may be the exploration of these and their continental context will provide a better understanding of the date and development of the Barrow 2 (134100) rather than the henge tradition. For the present, its interpretation and exact date remain uncertain.

The Channel Bronze Age

Continental connections are clearly visible in the grave goods from the ring-ditches in EKA2. Only two burials were accompanied by grave goods but in both cases these included exotic materials. The child buried in grave 230115 in Barrow 1 (Zone 13) had a faience bead and another object that was probably a composite one covered in gold sheet, placed with them (Fig 2.12). The young woman buried in grave 246134 in Zone 21 was accompanied by a V-perforated amber button, a copper alloy pin and a unique Triple Food Vessel (Fig 2.17; Pl 2.18). The pin points to the adoption of continental styles of dress and appearance, and the size of the amber button hints that it may have been made from Baltic amber, as lumps of amber this size are rarely found on the shores of eastern England. It is possible that a small amber bead from Middle Bronze Age pit 214001 in Zone 12 and the bronze awl from a Roman context in Zone 20 both derived from Early Bronze Age graves. Just to the west of the EKA2 scheme an Early Bronze Age female burial found west of Zone 23 at Tothill Street was accompanied by a bracelet or armlet made of jet from Whitby in Yorkshire, an amber bead, a polished fossil sponge bead and a bead made from a pig tusk (Bailey 2010, 70), and a slightly later jet bead was also found in a ring-ditch at Monkton (Bennett *et al* 2008; Sheridan and Davis 2008).

The presence of such 'exotic' materials is one of the defining features of the Early Bronze Age in the coastal regions of southern England and these, along with similarities in other kinds of evidence such as round houses in France, metal objects and pottery, demonstrate strong links with continental Europe (eg, Sheridan 2008; Needham *et al* 2009; Garwood 2011, 144–8). This network has been variously called the '*Channel Bronze Age*' (Needham *et al* 2006), '*Manche-Mer du Nord*' (Marcigny and Ghesquiere 2003) and the '*Channel/ southern North Sea "maritory"*' (Needham 2009).

The presence of jet objects in Bell Beaker burials at Chalk Hill and Manston (Bennett *et al* 2008; Moody 2008, 84, fig 42) show that Thanet was participating in this network from the late 3rd millennium and the recent finds of these rare materials on Thanet add to a cluster of such finds in East Kent (Champion 2004), the most well-known of which is the Ringlemere gold cup (Needham *et al* 2006). Links within southern England are also shown by locally made objects, such as the slotted incense cups from the Lord of the Manor and other sites in East Kent (Needham *et al* 2006, 64–5, fig 32; 33, 1; Moody 2008, 98, fig 51), and they are also reflected by the slightly later Trevisker Ware urns from Zone 6 (see Chap 3) and Monkton. These networks have been well discussed elsewhere, but the recent finds from Thanet provide valuable associations – of gold and faience, of amber and bronze, and of jet and amber – and, perhaps surprisingly, they also draw attention away from continental Europe and to the north of these islands.

Table 2.3 Radiocarbon measurements obtained for Neolithic features. Posterior density estimates derive from the model presented in Figure 2.23

Laboratory code	*Feature and context*
SUERC-40296	Grave 177085 (177086)
SUERC-40742	Pit 191086 (191085)
SUERC-40743	Pit 191086 (191085)
SUERC-40744	Pit 191086 (191085)

Food Vessels are not common in Kent, though one is known nearby from South Dumpton barrow 2 (Perkins 2004, 77–9). They are found more commonly in northern England, particularly in Yorkshire, and in Scotland, and it is for this reason that the best parallels for the zonal arrangement of the decoration on the vessel from grave 246134 and also for the use of plaited cord are found there, although plaited cord was also used on Trevisker Ware. Single miniature Food Vessels are also known from Yorkshire. The presence of objects made from Whitby jet, including the bangle from Tothill Street, also points to northern connections and suggests that the ceramic similarities of the Food Vessel may not be coincidental. Irrespective of its precise source, whether from the beaches of East Anglia or continental Europe, the amber used for the beads found in Zone 21 and at Tothill Street will ultimately have reached Thanet from the north. At present globular faience beads of the type found in Zone 13 are best known from East Anglia and Leicestershire (Sheridan and Shortland 2004).

As with the Cornish connections later demonstrated by the Trevisker urns, it is tempting to see the movement of metals as being involved, as well as that of 'exotic' materials. At Manston a jet bead and a bronze one were found in the same ring-ditch as the Trevisker Ware urn. In the case of tin, one of the V-perforated buttons from the Early Bronze Age burial at Rameldry in Fife in east Scotland was of Whitby jet and had been inlaid with tin, while another of the buttons at Rameldry is of Lizardite, which may have come from Cornwall (Baker *et al* 2003). While the tin, and perhaps the Lizardite, could have reached Fife via the Great Glen, a route which may well have been used for the tin used to decorate Migdale type axes (Needham 2004; Sheridan 2008, 68), the presence of jet at Rameldry suggests links along the eastern coast of Britain and the topographical and maritime importance of Thanet means that it is likely to have played a role in journeys along the eastern seaboard. Such links lie behind the presence of jet in Wessex and occasional finds in northern France (Briard 1965; Sheridan and Davis 2002; Needham 2009, fig 2.7d). Links with France are suggested by the similarity of the domed amber button from Zone 21 to that from Wimereux, Pas-de-Calais (Blanchet 1984, 95, fig 43; Needham *et al* 2006, 77) and the bronze pin from the same burial. It may be here that the inspiration for the large ring-ditch in Zone 13 is to be found.

Dating, finds and environmental summaries

Radiocarbon dating *by Alistair J Barclay and Chris J Stevens*

Neolithic features

Two features, a grave of uncertain date and an Early Neolithic pit (191086), were radiocarbon dated (Table 2.3). A single radiocarbon measurement (SUERC-40296) was obtained on a sample taken from the left femur from inhumation burial 177086. This returned a date of 3350–3090 cal BC (at 95.4% confidence) indicating that the burial is of Middle Neolithic date and contemporaneous with the use of Mortlake and Fengate style pottery that is generally accepted to be in use from 3350 BC until about 2800 BC (Barclay 2007, 344 and table 15.1; and see Leivers below).

To date pit 191086 precisely, samples were taken on three different types of short-lived charred plant remains (a charred flax seed, cereal grain and hazelnut shell: SUERC-40742–44; Table 2.3). Decorated Bowl is known to have been current during the 37th century BC until perhaps the 34th century BC. The project provided the opportunity to try and obtain a more precise date within the 37th and/or the 36th century BC. Using the OxCal programme a simulation model was built to determine the minimum number of radiocarbon dates required to achieve this level of precision. A single radiocarbon date may only return a date range within 250 years or more (eg, SUERC-40742 4750±35 BP at 95% confidence 3640–3380 cal BC), which would simply confirm what is already broadly known about this style of pottery. However, by obtaining at least three dates it would be possible to place the digging of the pit and the use of this pottery within about a 100 years (eg, either the 37th, 36th or 35th century BC). This would then allow the pit deposit and the type of pottery to be placed in sequence with other estimated events modelled with a similar level of precision.

The model (Fig 2.23) has good agreement (110.1). Given that the pit filling was likely to be a short event (probably within a single day or so) the age of the pottery is likely to be close to that of the digging of the pit. The digging of the pit has been modelled as *3640–3520 cal BC (95% probability) probably 3640–3570 cal BC (68% probability)*. As the pottery mostly consisted of large freshly broken refitting fragments the age estimate for the digging of the pit is highly likely to be close to that of the

Material identification	*Radiocarbon age (BP)*	*$\delta^{13}C$ (‰)*	*$\delta^{15}N$ (‰)*	*C:N ratio*	*Calibrated date range (95.4% confidence)*	*Posterior density estimate (95% probability)*
Human bone, left femur	4490±30	-21.9	11.2	3.2	3350–3090 cal BC	
Charred flax seeds	4750±35	-26.7			3640–3380 cal BC	*3640–3500 cal BC (93.2%)* *3410–3400 cal BC (0.5%)* *3400–3380 cal BC (1.7%)*
Charred cereal grain, Emmer grain	4775±35	-23.1			3650–3380 cal BC	*3640–3510 cal BC*
Charred hazelnut shell fragment	4730±35	-24.5			3640–3370 cal BC	*3640–3490 cal BC (89.1%)* *3430–3380 cal BC (6.3%)*

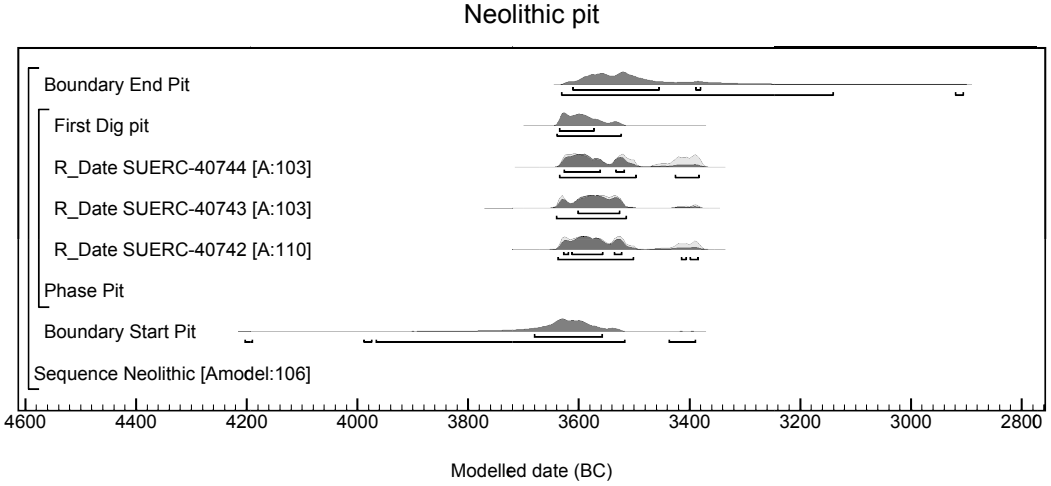


Fig 2.23 Probability distributions for the radiocarbon dates from pit 191086

pottery assemblage. This result provides a more precise date for a single group of decorated pottery that has stylistic affinities with Whitehawk pottery from the southern coastal regions of England.

The pit site is located only 1.5km from the Chalk Hill, Ramsgate causewayed enclosure that is associated with what is described as 'Carinated Bowl' and globular-shaped pottery (identified by Alex Gibson and summarised in Bayliss *et al* 2011, 372–6). The dating of the Chalk Hill enclosure has been presented by Bayliss *et al* (2011, fig 7.21), although this may be refined with the final publication of the site report. The site chronology based on their work is represented in Figure 2.24 using the OxCal 4.1v programme, which gives near identical results. This indicates that the Chalk Hill enclosure was probably built at some point during *3780–3670 cal BC (95% probability) and more probably 3750–3690 cal BC (at 68%)* (see Fig 2.24; modelled as *Build_Chalk_Hill*), whilst the enclosure was abandoned at some point during *3640–3600 (95% probability) or more likely 3640–3600 cal BC (68% probability)*. The latter is similar to the dates obtained for the digging of the pit (see above and Fig 2.25). However, using the OxCal Order function there is a 70% probability that the enclosure was abandoned before the pit was dug. It is very likely that the enclosure went out of use within a generation or two (*up to 50 years at 68% probability or 105 years at 95% probability*) before the pit was dug.

Early Bronze Age

Eleven radiocarbon dates were obtained, mostly on human bone samples from burial deposits. Three (SUERC-40278, 40280–81) are on cremated bone from individual grave deposits and seven (SUERC-40291–92, 40713, 40718, 40720–22) are on inhumed bone from burials; a single measurement was made on a skull from an Iron Age feature (SUERC-40290). The main purpose was to confirm the date of each individual burial. Details of each sample, its context and its calibrated date range can be found in Table 2.4 with the results shown in chronological order in Figure 2.26 (red for cremated bone and black for inhumed bone samples) and in the probability order Table 2.5.

Ten of these burials span the Early Bronze Age period with the earliest one, inhumation 220053, likely to be of 21st or 20th century BC date (SUERC-40718: 2130–1890 cal BC at 95% confidence). Slightly later in date is cremation burial 159133 (SUERC-40278: 2030–1770 cal BC at 95% confidence). The latest burials are deposits of cremated bone, 125220 and 141083 that are dated by SUERC-40280 and 40281 respectively and were made during the 17th or 16th century cal BC (see Table 2.4). Overall all of the Early Bronze Age burials span a period that could have lasted between *250 and 470 years* with the suggestion that one or more burials were made, possibly at intervals, every one or two generations. One such group are the three dated burials from Barrow 1. Bone samples from all three burials produced date ranges that are statistically consistent and therefore are likely to be of a similar age (T'=0.4, T'(5%)=6.0; ν=2). Using the OxCal Order function the result SUERC-40713 for 126004 is probably the earliest of the three (*by 63% and 65% probability respectively*), whilst the probability that the date for 216091 (SUERC-40720) is earlier than 246134 (SUERC-40721) is slight (*only 52% probability*) (Table 2.5).

Table 2.4 Radiocarbon measurements obtained for Early Bronze Age features

Laboratory code	*Feature and context*
SUERC-40278	Grave 159133 (159132)
SUERC-40280	Grave 125220 (125223)
SUERC-40281	Grave 141083 (141084)
SUERC-40290	Grave 136129 (136128)
SUERC-40291	Grave 136132 (136131)
SUERC-40292	Grave 174060 (174057)
SUERC-40713	Grave 126004 (126005)
SUERC-40718	Grave 220051 (220053)
SUERC-40720	Grave 216091 (216092)
SUERC-40721	Grave 246134 (246136)
SUERC-40722	Grave 132095 (132096)

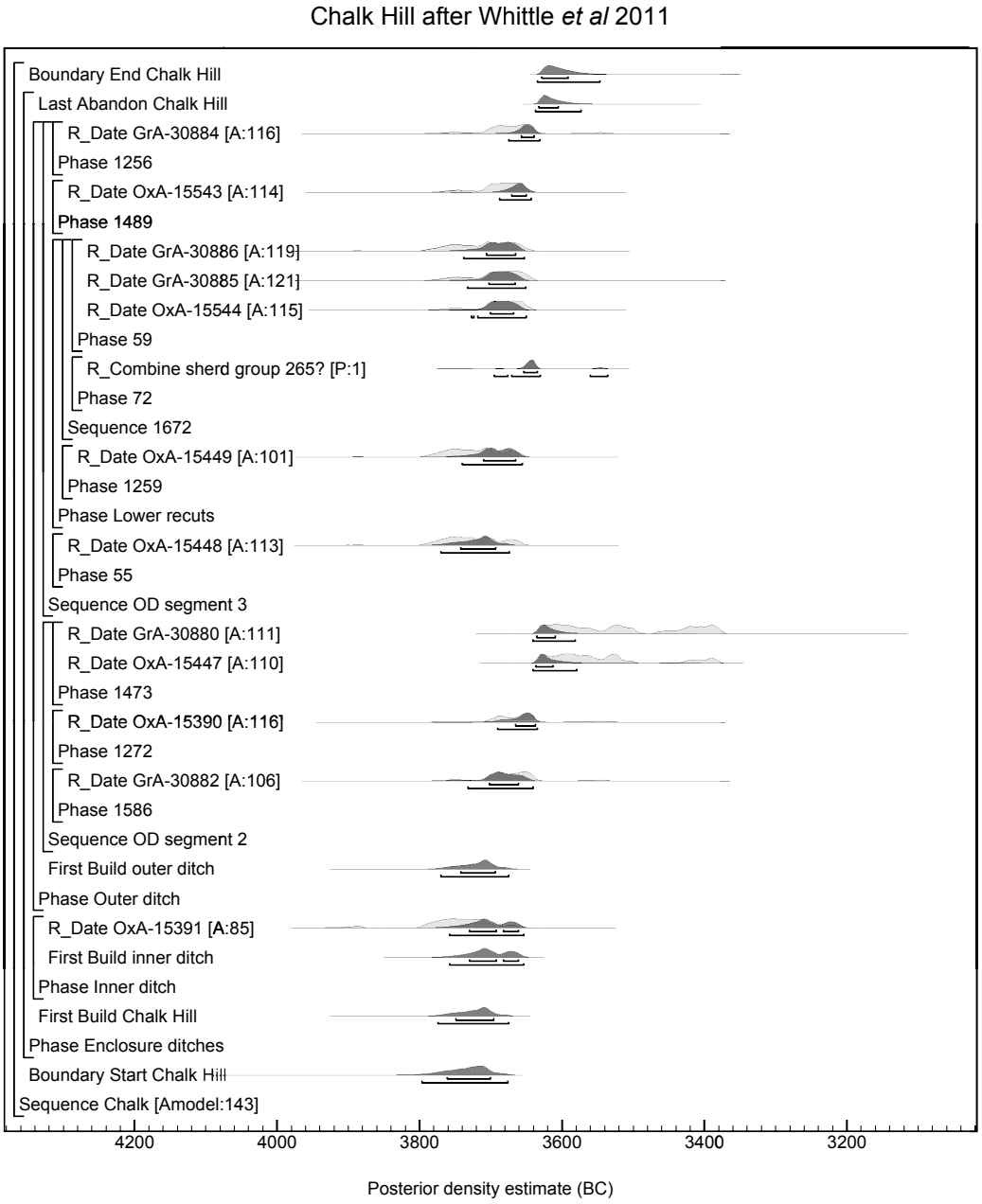


Fig 2.24 Probability distributions for the radiocarbon dates for Chalk Hill causewayed enclosure

Material identification	*Radiocarbon age (BP)*	*$\delta^{13}C$ (‰)*	*$\delta^{15}N$ (‰)*	*C:N ratio*	*Calibrated date range (95.4% confidence)*
Cremated bone indet.	3565±30	-25.9			2030–1770 cal BC
Cremated bone indet.	3280±30	-22.0			1640–1460 cal BC
Cremated bone indet.	3340±30	-24.8			1730–1520 cal BC
Human bone, left femur	3490±30	-20.5	10.6	3.3	1900–1700 cal BC
Human bone, left femur	3435±30	-21.2	10.4	3.2	1880–1660 cal BC
Human bone, skull	3445±30	-21.4	10.5	3.2	1880–1680 cal BC
Human bone, left femur	3535±35	-21.1	10.50	3.2	1960–1750 cal BC
Human bone, right femur	3625±35	-21.5	10.1	3.2	2130–1890 cal BC
Human bone, right femur	3510±35	-21.6	10.0	3.2	1930–1740 cal BC
Human bone, left femur	3505±35	-21.6	9.8	3.2	1930–1740 cal BC
Human bone, right humerus	3435±35	-20.7	10.6	3.2	1880–1640 cal BC

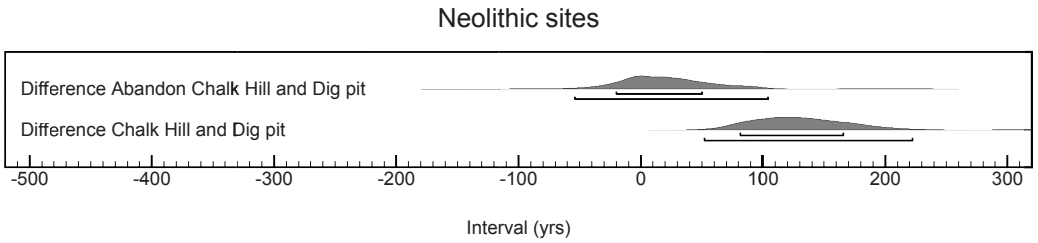


Fig 2.25 Posterior density estimates for the difference between the abandonment of Chalk Hill and the digging of Neolithic pit 191086 (upper), and the construction of Chalk Hill and the digging of the pit (lower). Modelled using the OxCal difference function

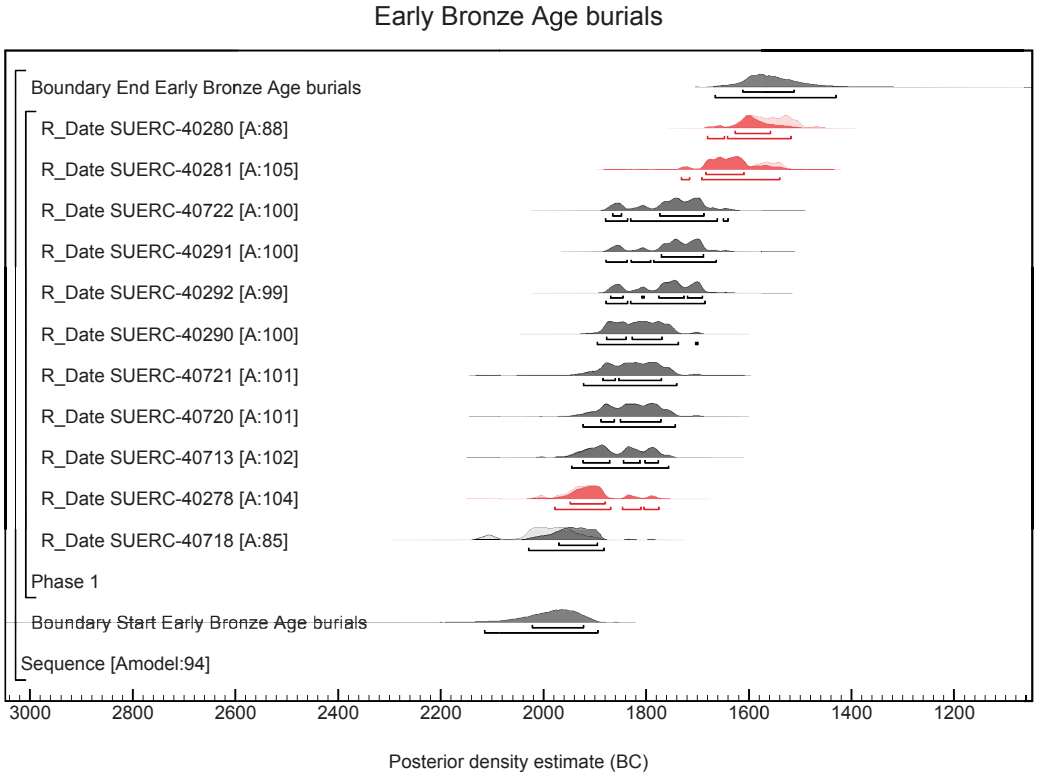


Fig 2.26 Radiocarbon probability distributions for Early Bronze Age burials

Table 2.5 Early Bronze Age radiocarbon dates. Probability (%) order of radiocarbon dates for selected EBA burials. The table should be read from the left hand column across each row. The stated probability is that the date in the left hand column is older that the corresponding date in the top row (eg, SUERC-40718 is older than SUERC-40278 is 79% = 0.79 probability)

	SUERC-40718	*SUERC-40278*	*SUERC-40713*	*SUERC-40720*	*SUERC-40721*	*SUERC-40290*	*SUERC-40292*	*SUERC-40291*	*SUERC-40722*	*SUERC-40281*	*SUERC-40280*
SUERC-40718	0	79	92	97	97	99	99	100	100	100	100
SUERC-40278	21	0	74	85	86	90	95	97	97	100	100
SUERC-40713	8	26	0	63	65	70	85	90	88	100	100
SUERC-40720	3	15	37	0	52	57	79	85	83	100	100
SUERC-40721	3	14	35	48	0	55	77	84	82	100	100
SUERC-40290	1	10	30	43	45	0	74	81	79	100	100
SUERC-40292	0	5	15	21	23	26	0	59	57	98	100
SUERC-40291	0	4	10	15	16	19	41	0	49	96	100
SUERC-40722	0	4	12	17	18	21	42	5	0	96	99
SUERC-40281	0	0	0	0	0	0	2	4	4	0	81
SUERC-40280	0	0	0	0	0	0	0	0	1	19	0

Overall only the earliest of these burials (SUERC-40718, 220053 in grave 220051) is likely to overlap with the Beaker burial tradition, the majority are arguably later than the main episode of Beaker-associated activity during the final centuries of the 3rd millennium cal BC.

Worked flint *by Phil Harding*

The earliest occupation of Thanet is represented by one Palaeolithic flake from Zone 22 on the Chalk ridge near Telegraph Hill, Minster. Such material is rare, but perhaps not unexpected, from the area.

Thanet undoubtedly continued to serve as a prominent landmark during the final stages of the Last Glaciation and into the Early Mesolithic before Britain was separated from continental Europe by the rising sea level. From Zone 13, on a Chalk eminence overlooking Pegwell Bay, came a rare, isolated double burin made on a blade, which probably illustrates human activity on Thanet in the Late Upper Palaeolithic/Early Mesolithic period.

The predominance of tranchet axes as an indicator of Mesolithic activity has been confirmed by the discovery of an additional example from the low lying, east-facing embayment below Ebbsfleet Hill. The discovery on Zone 6 was supplemented by two microliths, including one found with bifacial thinning waste and a bladelet core in a tree-throw hole. However, the date of this material within the Mesolithic remains uncertain. The soft hammer-struck, bifacial core tool thinning waste is more refined than that represented on the tranchet axe and this suggests that the core tool debris is of Early Neolithic date, a period that is well represented in the area. Alternatively this may represent transitional activity from the Late Mesolithic to Early Neolithic. The strongest evidence for Mesolithic activity along the road line therefore lies in the protected lower fringes of Ebbsfleet Hill. Seasonal Mesolithic campsites frequently favoured such low lying ground where they were often associated with well drained sandy substrates.

The onset of more settled forms of lifestyle in the Early Neolithic period produced greater quantities of worked flint across the entire route. This provided an opportunity to observe landuse and settlement distribution in more detail than was possible for the earlier periods, although much of the Early Neolithic material was residual or of insufficient quantity to undertake detailed metrical analysis. The intensity of occupation was to some extent reflected in the incidence of rubbish pits which also contained artefacts of Bullhead flint. Pits were distributed from the Cliffsend spur, across the 'head brick earth' and southwards towards the Ebbsfleet Peninsula, most notably in Zones 6, 10–12 and 14, coincidental with the distribution of the Bullhead Beds. Polished and flaked axes, complete and fragmentary, were clustered on the Ebbsfleet Peninsula, and evidence that core tool manufacture was undertaken in the area can be demonstrated by the discovery of a flaked axe

Pl 2.33 Neolithic axes from Zones 6 and 11

rough out from Zone 6 (Pl 2.33 left). This focus of Early Neolithic activity was replicated by another separate area of occupation on Telegraph Hill to the north-west.

The distribution of microdenticulates corresponds well with the anticipated distribution of Neolithic activity. Leaf arrowheads were found from the Cliffsend spur, in Zone 14, across the 'head brick earth' extending southwards in a concentration across the Ebbsfleet Peninsula, and clustered on Telegraph Hill in Zones 21, 22 and 23 (Pl 2.34). The combination of artefact types, their density and extent along the Chalk ridge suggests that this represents relatively long term or repeated occupation rather than casual stopping points during hunting expeditions.

Evidence of human activity in the Middle and Late Neolithic periods on Thanet as demonstrated by worked flint assemblages is sparse, but two chisel arrowheads came from Zone 6 and a further two from Zone 13. This pattern supports an argument for continuity of occupation and complements existing evidence from the area.

Evidence of Beaker activity was also only thinly represented in the worked flint from the project; only one pit, from Zone 10, contained Beaker pottery and a small assemblage of flakes. One barbed and tanged arrowhead was recovered from Zone 14, and a number of small, thumbnail scrapers from that area may also hint at Early Bronze Age/Beaker activity.

Expansion of activity across the Chalk ridge as documented by the construction of Early Bronze Age burial mounds is also reflected in the pattern of flint exploitation. Fresh nodules that were encountered as ditches were dug were used in combination with surface nodules. In both Zones 21 and 23 flake-based core preparation waste lay in dumps at the interface of the primary and secondary fills of ring-ditches. Limited refitting material, microdebitage and distinct variations in the density of material suggest that flaking took place at industrial 'workshops' situated at the ditch edges around the monuments, retouched tools being generally absent. Several other ring-ditches also provided similar evidence for secondary use as rubbish dumps.

Pl 2.34 Sieving for worked flint and other finds in Zone 21

Pottery *by Matt Leivers*

The earliest ceramics belong to the Early Neolithic, being decorated bowls dating to the 36th century BC. The largest group came from pits in Zone 14. Nine features contained sherds including heavy hemispherical bowls, shouldered bowls, and two vessels with angular carinations. Rims are rounded or flattened and upright, sometimes slightly pulled down internally; externally expanded; and everted. There was a single instance of a flat, horizontal, crescentic lug handle; another of a vessel with long oval lugs on the shoulder. The surfaces of some vessels retained an applied slip, and many had smoothed interiors. Others were burnished externally and had internal wiping. Decoration consisted of diagonal lines on rim tops; vertical tooling in necks; one rim had incised zig-zags; closely-spaced bone and other dot impressions on external surfaces were quite common; carinations had diagonal lines above (and in one instance below) the angle; various other incised or tooled lines were present. The vessel with shoulder lugs had alternate panels of dot impression and finger fluting above the shoulder and panels of dots below. Much smaller quantities of similar pottery came from Zones 6 and 8.

Middle Neolithic Peterborough Ware was recovered from only two locations – from pit 123001 in Zone 10 and pit 228052 in Zone 19. The latter derived from the collar of a Fengate-type vessel; the former contained sherds from two vessels, one a Mortlake-type vessel with typical expanded T-shaped rim decorated with twisted cord impressions. A single sherd from a second vessel had closely-spaced parallel lines of twisted cord impressions.

Only very small quantities of Beaker or possible Beaker were recovered and only pit 171152 in Zone 20 contained any Collared Urn. A very remarkable Food Vessel came from grave 246134 within ring-ditch 216090 in Zone 21 (Pl 2.35). This unique vessel consisted of three conjoined pots, each of approximately the same size only 45mm high, decorated all over with lines of slashes and impressed plaited cord. The form and decoration suggest links with areas distant from Kent, perhaps Cornwall, Yorkshire or central Scotland.

Pl 2.35 Triple Food Vessel from grave 246134 (Zone 21)

Miscellaneous finds
by Sue Nelson and Alistair J Barclay

A V-perforated amber button came from grave 246134 within ring-ditch 216090 on Zone 21. It was associated with the Triple Food Vessel and a fragmentary copper alloy pin. All these types of object are extremely rare for Thanet and indeed Kent generally.

There is a small faience bead, pale blue and of spherical form (Fig 2.12), from another Early Bronze Age grave (which also produced two tiny fragments of gold sheet) in Zone 13, and an amber bead from a Middle Bronze Age pit in Zone 12. Both are also unusual finds for Kent.

A copper alloy awl from a Roman context in Zone 20 may derive from an undiscovered, disturbed Early Bronze Age burial. A 'point' is the only worked bone artefact of possible early prehistoric date, from the upper fill of a ring-ditch on Zone 8.

Human bone *by Jacqueline I McKinley*

The early prehistoric inhumed and cremated bone are summarised in Tables 2.6–7; further details may be found in Vol 2, Chap 13.

Animal bone *by Lena Strid*

The assemblages from the Middle Neolithic, Early Bronze Age and Middle Bronze Age were too small to give information on animal husbandry strategies for the settlements along the EKA2. Cattle dominate the Bronze Age assemblages, followed by sheep/goat and horse. The presence of carnivore gnaw marks indirectly supports the presence of dog. The absence of pig is probably caused by representative bias due to the small sample size.

With the exception of a fossil shark tooth, no fish remains were recovered from early prehistoric deposits.

Plant remains *by Kath Hunter and Rebecca Nicholson*

As is commonly the case for early prehistoric sites, relatively few identifiable plant remains were recovered from Neolithic contexts. Samples from five Early Neolithic pits were sorted and fully recorded and all produced charred hazel (*Corylus avellana*) nutshell, a typical find for the period and indicative of the collection and utilisation of wild resources. Emmer wheat-type grains (*Triticum* cf. *dicoccum*) and flax (*Linum* cf. *usitatissimum*) seeds and stems (identified by C Stevens) were identified in the fill of pit 191086 (sample 5510), from the Cliffsend spur (Zone 14). In order to obtain a precise date for the pit, and to rule out the possibility that these remains were intrusive, three radiocarbon dates were obtained, each on a different species (SUERC-40742–44, see Table 2.3), and these confirmed the Early Neolithic date of these wild and cultivated resources. Also present in the fill of pit 191086 was possible spelt (*Triticum* cf. *spelta*) chaff and a possible wild or cultivated oat (*Avena* sp.) grain fragment. While the rare charred plant fragments from the other Early Neolithic pits have not been radiocarbon dated, it is likely that they are of similar date. A possible barley (cf. *Hordeum* sp.) rachis fragment and three charred legume fragments were recovered from sample 8385, pit fill 312050 (Zone 6, pit 312049).

The radiocarbon dates obtained are slightly later than those obtained for indeterminate cereal remains from White Horse Stone (NZA-21506: 5039±25 BP, 3950–3760 cal BC; Allen *et al* 2006), and also later than those obtained from pits at Ellington School, Ramsgate (Carruthers 2011) and from a pit at Westwood Cross (Stevens 2011b). There is a suggestion that these earlier finds represent votive offerings, and although a little later in date this may also be the case for at least the EKA2 assemblage from pit 191086. Examples of, as yet undated, charred cereals, apple and hazelnut shell were also recovered from the Thanet Earth site to the north (Carruthers 2012). The relatively small amount of material recovered may suggest that other plant remains such as cereal chaff have not survived and the assemblage could equally represent accidental burning and deposition of crop and wild food resource waste or be the result of a deliberate deposition event.

Although possible club wheat grains (*Triticum compactum*-type) have been identified in surprisingly high concentrations at Thanet Earth (Carruthers in prep.), no wheat grains of this type have been identified in samples from the EKA2. The reason for this difference is unclear, but it highlights the need for targeted sampling of Neolithic deposits in this area.

Charcoal *by Denise Druce*

Material from two Early Neolithic pits was examined. Pit 191179 in Zone 14 was dominated by oak, with hawthorn-type, wild cherry and rare hazel. In Zone 6, pit 312049 contained a relatively diverse assemblage of ash and hawthorn-type, rare oak, elm, hazel and blackthorn-type. Ash and blackthorn/hawthorn-type are typical of open woodland and scrub. None of the ash fragments exhibited tyloses, which restrict the movement of moisture in vessels of hardwood trees over 50 years in age. It is possible therefore, that the charcoal represents the remains of wood fuel collected from the woodland floor.

Snails *by Elizabeth Stafford*

The earliest snail bearing deposits that were sampled were the Bronze Age ring-ditches along the Chalk ridge. These were dominated by open country species (eg, *Vallonia, Pupilla muscorum, Vertigo pygmaea, Truncatellina cylindrica*) indicative of very dry open environments, probably short-turfed grassland, and are consistent with the molluscan assemblage zones e–f at Holywell

Table 2.6 Early prehistoric unburnt human bone

Context	*Cut*	*Deposit type*	*Phase*	*Quantification*	*Age/sex*
Zone 13					
130080	134096	R. (ring-ditch)	E/MBA	*c* 2% l.	juvenile *c* 6–8 yr.
136128	136129	inh. burial	EBA	*c* 84%	adult *c* 35–45 yr. ?male
136131	136132	inh. burial	EBA	*c* 29% a.u.l.	adult >18 yr. ??male
145187	134096	R. (ring-ditch)	E/MBA	1 frag. a.	neonate
145233	248097	inh. burial	EBA	*c* 25%	juvenile *c* 7–9 yr.
166111	166108	R. (ring-ditch)	BA	1% s.	adult *c* 18–35 yr.
174057	174060	R./?placed (SFB)	EBA	*c* 5% s.	adult >45 yr. ?male
177086	177085	inh. burial	M. Neo.	*c* 81%	adult *c* 45–65 yr. Male
186118	134097	R. (ring-ditch)	E/MBA	*c* 6% s.l.	foetus *c* 30–32 weeks
200071	134097	R. (ring-ditch)	E/MBA	1 bone s.	adult *c* 25–45 yr.
230116	230115	inh. burial	E/MBA	*c* 2% s.	infant *c* 2–3 yr.
230119	230118	inh. burial	E/MBA	*c* 7%	juvenile *c* 5–12 yr.
Zone 21					
126005	126004	inh. burial	EBA	*c* 71%	adult *c* 40–55 yr. ?female
132096	132095	inh. burial	EBA	*c* 68%	juvenile *c* 5–6 yr. ??female
216092	216091	inh. burial	EBA	*c* 45%	adult *c* 20–25 yr. ??female
220053	220051	inh. burial	EBA	*c* 85%	adult *c* 25–30 yr. ?female
246136	246134	inh. burial	EBA	*c* 86%	subadult/adult *c* 16–19 yr. ?female

KEY: s.a.u.l. – skull, axial skeleton, upper limb, lower limb (skeletal areas represented where not all are present); R. – redeposited; op – osteophytes; ddd – degenerative disc disease; *o.c. dissecans – osteochondritis dissecans*; sbc – solitary bone cyst; mv – morphological variation; bsm – body surface margins; C/T/L/S – cervical/thoracic/lumbar/sacral vertebrae, MtC/MtT – metacarpal/tarsal; MtC/T–P – metacarpal/tarsal – phalangeal joint; IP – interphalangeal joint; apj – articular processes (vertebrae); tp–transverse process (vertebra); c-v – costo-vertebral; a-c – acromio-clavicular; s-c – sterno-clavicular; p-d proximal-dist

Coombe (Preece and Bridgland 1998). This implies that if forested conditions did indeed prevail during the Early to mid-Holocene, substantial clearance had occurred prior to the construction of the barrows.

In the profiles from Zones 21 and 23 there are, however, notable increases in shade-demanding elements in the secondary and tertiary fills that indicate the growth of vegetation within and around the features, rank grass and possibly some scrub. In contrast, the ring-ditch in Zone 13 (216075) shows no real evidence for this, which may suggest that the feature was being maintained, and perhaps also grazed.

Soil micromorphology *by Richard I Macphail and J Crowther*

Soil thin-section analysis indicates that the fills within the Early Bronze Age inner ditch in Zone 3 were rapid layered sands and clayey sands that infilled the feature in probably open conditions. Rare charcoal, probably relict of clearance, was noted. Two thin sections and bulk soil analysis from Early Bronze Age barrow 195004 (Zone 23 on the Chalk ridge) seem to suggest a history of: firstly, an initial occupation perhaps associated with flint working (possibly fine flint debris and other fine anthropogenic inclusions); secondly, later use of the area for pasture, which led earthworms to form a stone-free soil; thirdly, a second, immediately pre-barrow occupation related to use of the site and barrow(s) construction; and fourthly, post-burial formation of iron manganese nodules and earthworm burrowing through chalky soil associated with the barrow mound. The fill of ditch 195070, associated with Bronze Age barrow 193123 in Zone 23 included a likely 'turf' stabilisation horizon where a bioworked and homogenised humic fine soil occurs over a relatively more minerogenic fill. This humic soil probably reflects a local calcareous brown earth soil cover (Coombe I soil association; Jarvis *et al* 1983), and findings from previous studies of turf barrows from the Monkton–Mount Pleasant areas of Thanet (Macphail 1995). Background anthropogenic inclusions were also present.

Pathology	*Comment*
ante mortem tooth loss; dental caries; calculus; hyperostosis – T9-12, L2, calcified rib cartilage, osteoarthritis – T9-10 rib facets, right 12th rib facet; Schmorl's nodes – T12 + 1; lytic destructive lesion – L4-5; plastic changes – right humerus; op – right glenoid & distal ulna, left rib, right pisiform, T9-12 bsm, 1T apj, L2 & L4-5 bsm; pitting – left rib; enthesophytes – patellae & calcanea; mv – crown variation, rotation, absence 3 M3s (mandibular & left maxillary) & mandibular right P2	4, machine damage
	5+
	4 articulation not recognised on site – disturbed ?in machining
	1–2
sharp-weapon trauma	3–4
calculus; periodontal disease; ankylosis – C4-5; infection – S1-L5 body surfaces; osteoarthritis – C4-5, T1 & 3; ddd – C5-6, 3T; Schmorl's node – 1L; op – right glenoid, right knee, L1 + 1 bsm, S1 bsm; pitting – acetabulae; enthesophytes – patellae	4–5
	5+
	4–5
calculus; dental caries; dental abscess; fracture – left proximal fibula; periosteal new bone – right mandibular fossa; osteoarthritis – 1T apj; ddd – 1T; op – right distal humerus, left 1st proximal IP (hand), left acetabulum, 2T bsm; pitting – left acetabulum; enthesophytes – right proximal femoral notch; mv – wormian bone	
periosteal new bone – left femur	4–5
mv – metopic suture	4 *taphonomy*: 'filleting' cuts on lower (?& poss. upper) limb bones
calculus; surface defect – medial clavicles; op – L6 bsm, S1 bsm; pitting – a-c joints; mv – metopic suture, mandibular supernumery tooth, L6, wormian bones	4–5
calculus; mv – wormian bones, maxillary I2s slightly shovelled	3–4

Table 2.7 Early prehistoric cremated human bone

Context	*Cut*	*Deposit type*	*Phase*	*Bone weight*	*Age/sex*	*Pathology*	*Pyre goods/ grave goods/inclusions*
Zone 8							
273030	274001	R. (ditch)	?EBA	0.1g	>infant (>5 yr.)		
273032	274001	R. (ditch)	EBA	0.5g	human		
274005	274001	rpd (ditch)	?EBA	3.3g	subadult/adult >13 yr.		
Zone 10							
123002–3	123001	crd	M. Neo.	4.3g	>infant (>5yr.)		
197143	197134	R. (ditch)	?EBA	0.2g	human		
Zone 13							
159133	159132	un. burial + rpd	EBA	328.2g	adult >35 yr. ??male	op – distal finger phalanx; entheso-phytes – femur shaft	
Zone 21							
125222	125220	urned burial	EBA	176.3g	juvenile *c* 8–9 yr.		
125223	125220	R./bioturbation	EBA	18.9g	= 125222		
228058/66$	228059	R. (SFB)		-			
Zone 23							
128067$	128031	placed deposit	?EBA	-			
141084	141083	?rpd/?un. burial + rpd	EBA	42.2g	subadult *c* 14–15 yr.		

KEY: $ – lab excavation by osteoarchaeologist; un. burial. – unurned burial; rpd – redeposited pyre debris; crd – cremation-related deposit; R. – redeposited; op – osteophytes

Chapter 3

Expansion and Consolidation: Later Prehistoric Landuse

by A P Fitzpatrick, Kate Brady, Oliver Good, and Gerry Thacker

Middle to Late Bronze Age (1500–700 BC)

Zones 1, 2 and 3

Late Bronze Age

Two small pits (190347 and 190349) located towards the northern edge of Zone 2 probably represent the earliest features at the tip of the Ebbsfleet peninsula (Fig 3.1). The pits were sub-circular in plan, 0.5–0.6m in diameter, and up to 0.16m deep with shallow, bowl-shaped profiles. Both features contained single fills, from which worked flint dated to the Late Bronze Age was recovered. No other Late Bronze Age features were identified in Zones 1–3 but there was significant Late Bronze Age activity further to the north in Zones 4 and 5 (see below).

Zones 4, 5 and Weatherlees Pond

Late Bronze Age

The northern part of the Ebbsfleet peninsula has seen the discovery of several hoards of Late Bronze Age 'Carp's Tongue' metalwork, all found since the late 19th century (Wessex Archaeology 2004; Andrews *et al* 2009). A further small hoard of copper alloy objects and a spread of individual fragments were recovered at the north end of Zone 4 during the EKA2 works. In addition, a pair of broadly similar gold bracelets (ON 880 and 881) of early 1st millennium BC date came from heavily disturbed subsoil in the same area of Zone 4 (Fig 3.1). These objects are likely to represent or have derived from a hoard – if so, they are the first hoard-related gold objects to be found on the peninsula. A deposit previously interpreted as a midden (see below), and which contained at least two hoards (recovered in 2004–5), has now been shown to have been located in a slightly lower lying and possibly wetter area, which may have influenced where these hoards were deposited. The Late Bronze Age features are concentrated towards the southern and north-western areas of the zone, and there is no evidence for contemporary metalworking on site, despite the presence of the hoards.

'Wet area/alluvial spread 172262' and its enclosure

Located towards the south-eastern corner of Zone 4 was deposit 172262 (Fig 3.1; Pl 3.1), which had previously been interpreted as a 'midden' (Wessex Archaeology 2004; Egging Dinwiddy and Schuster 2009, 73–5). This material extended over an area of approximately 60m² and was 0.2m deep. The deposit was initially hand-excavated in a grid of 1m² test pits, with bulk environmental and monolith samples taken through the deposit, and a mechanical excavator was then used to remove the reminder of the deposit in controlled spits. Moderate quantities of Late Bronze Age pottery (just over 2kg), worked flint, fired clay and burnt flint were recovered from the layer during excavation. Deposit 172262 was a dark grey brown, silty clay and has been re-interpreted as a probable alluvial spread that had formed within a natural hollow. The spread represents the westernmost edge of a more extensive deposit that was investigated in the earlier excavations (Egging Dinwiddy and Schuster 2009, fig 2.6). Overall this deposit covered 475m². This deposit may have accumulated in a wet/marginal area within a shallow hollow, and possibly served as a location for 'special deposits,' as evidenced by the two hoards of metalwork found in 2004–5. No further metalwork-related to these two hoards was found during the EKA2 works.

Gully 190223 recorded towards the northern extent of the layer was sealed by layer 172262. The gully was 2.5m in length and had a narrow, U-shaped profile.

Pl 3.1 Late Bronze Age alluvial deposit 172262 (Zone 4; view from north)

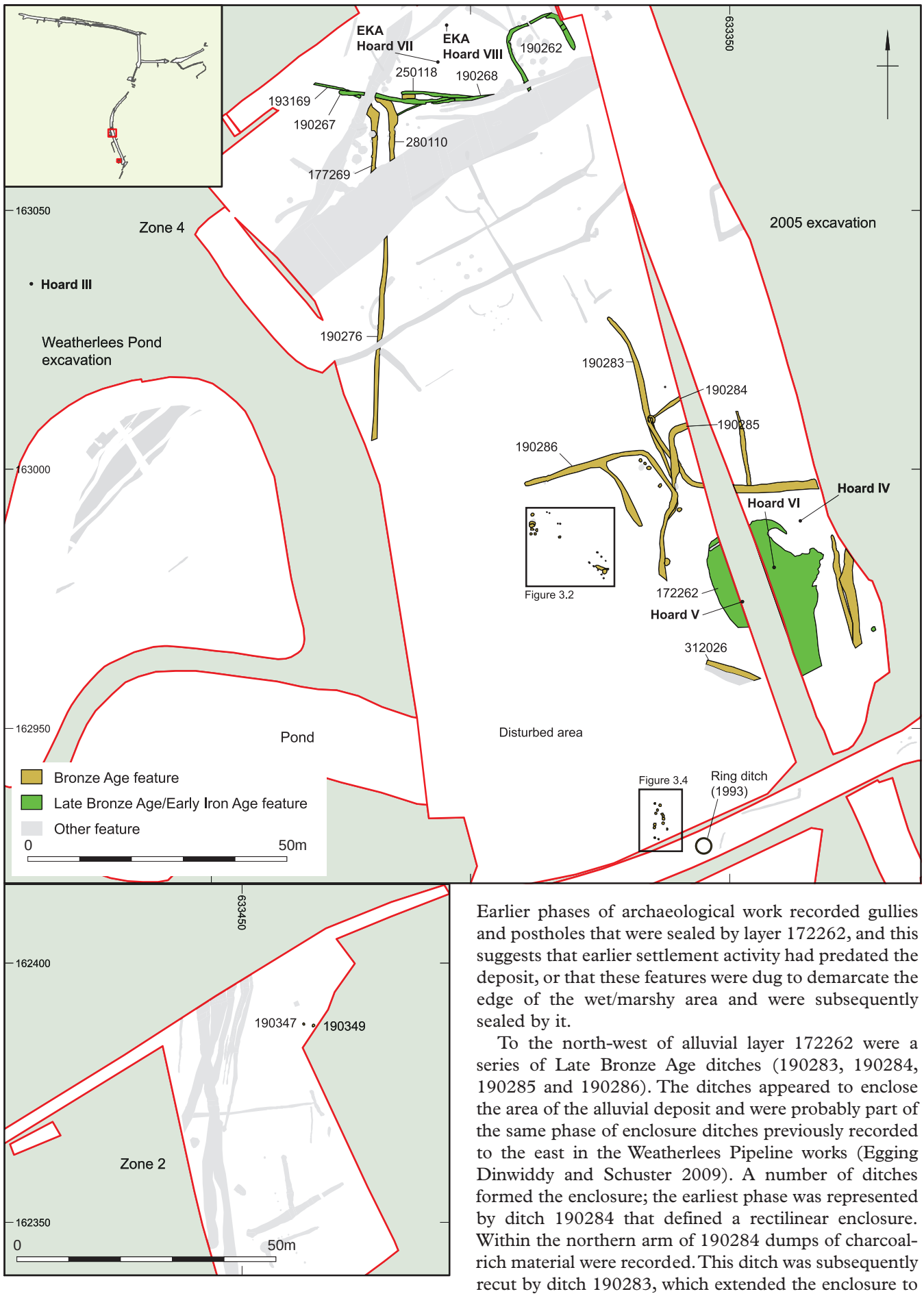


Fig 3.1 Location of Late Bronze Age–Early Iron Age features in Zones 2 and 4–5

Earlier phases of archaeological work recorded gullies and postholes that were sealed by layer 172262, and this suggests that earlier settlement activity had predated the deposit, or that these features were dug to demarcate the edge of the wet/marshy area and were subsequently sealed by it.

To the north-west of alluvial layer 172262 were a series of Late Bronze Age ditches (190283, 190284, 190285 and 190286). The ditches appeared to enclose the area of the alluvial deposit and were probably part of the same phase of enclosure ditches previously recorded to the east in the Weatherlees Pipeline works (Egging Dinwiddy and Schuster 2009). A number of ditches formed the enclosure; the earliest phase was represented by ditch 190284 that defined a rectilinear enclosure. Within the northern arm of 190284 dumps of charcoal-rich material were recorded. This ditch was subsequently recut by ditch 190283, which extended the enclosure to the north. Ditches 190283 and 190286 possibly formed an entrance, 2.5m wide, into the enclosure. These

ditches curved to the south-east and south-west (respectively) of the entrance, appearing to enclose the alluvial layer 172262. Due to modern truncation the extent of the enclosure was largely obscured to the south. However, a further length of Late Bronze Age ditch (312026), that had been recut in the Early Iron Age by ditch 312029, possibly formed the southern side of the enclosure. Ditches recorded during works on the Margate to Weatherlees Pipeline (Egging Dinwiddy and Schuster 2009) may have formed further parts of the southern and eastern edges of the enclosure.

Enclosures

In the northern half of Zone 4 were a number of Late Bronze Age ditches, together comprising group 193169 that probably defined parts of at least two enclosures (Fig 3.1). The ditches formed a T-shape in plan; from the south, ditch 190276 ran north-south for 40m where it was cut by the large Middle/Late Iron Age and Early Roman enclosure/boundary ditches (190288 and 190289, see below). Ditch 190276 had a shallow, concave profile, with a maximum depth of 0.5m, and had been allowed to silt up naturally; it had been truncated by modern disturbance to the south. To the north of the Middle/Late Iron Age and Early Roman ditches, two ditches, 177269 and 280110, continued on the alignment of 190276 and met a series of east-west ditches. The easternmost ditch (280110) was relatively substantial, and had a V-shaped profile and contained two naturally derived deposits. The western ditch (177269) was shallower and had been cut by a possible storage pit of Early Iron Age date.

A series of short gullies and a ditch made up the east-west axis of the T-shaped arrangement of Late Bronze Age linear features. Ditch 190267 was the latest in the sequence; it had a shallow, rounded profile (0.23m deep) with a single, secondary fill containing pottery and burnt flint. The ditch was cut by Late Bronze Age–Early Iron Age 'land division' ditch 190263 (see below) but continued to the west where it terminated. Ditch 190267 cut three earlier, Bronze Age ditches that were on the same alignment (190268) and was the latest in this sequence prior to the establishment of the 'land division' features 190263 and 190264. To the east, the ditch was truncated by Late Iron Age ditch 190271.

Towards the north-eastern corner of the zone a rectilinear enclosure (190262) of probable Late Bronze Age to Early Iron Age date was recorded. An area of

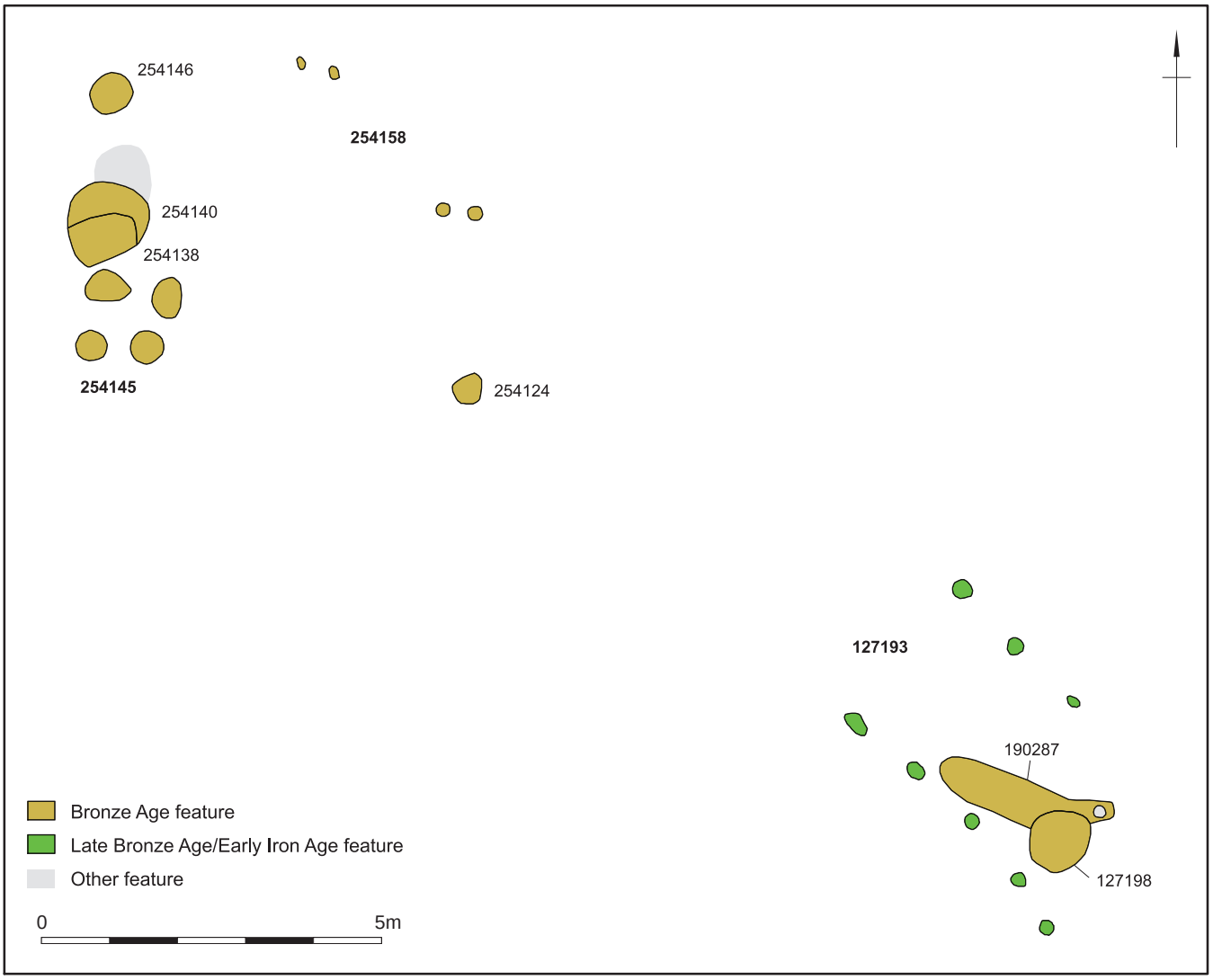


Fig 3.2 Plan of Late Bronze Age structures 127193 and 254145 and adjacent features in Zone 4

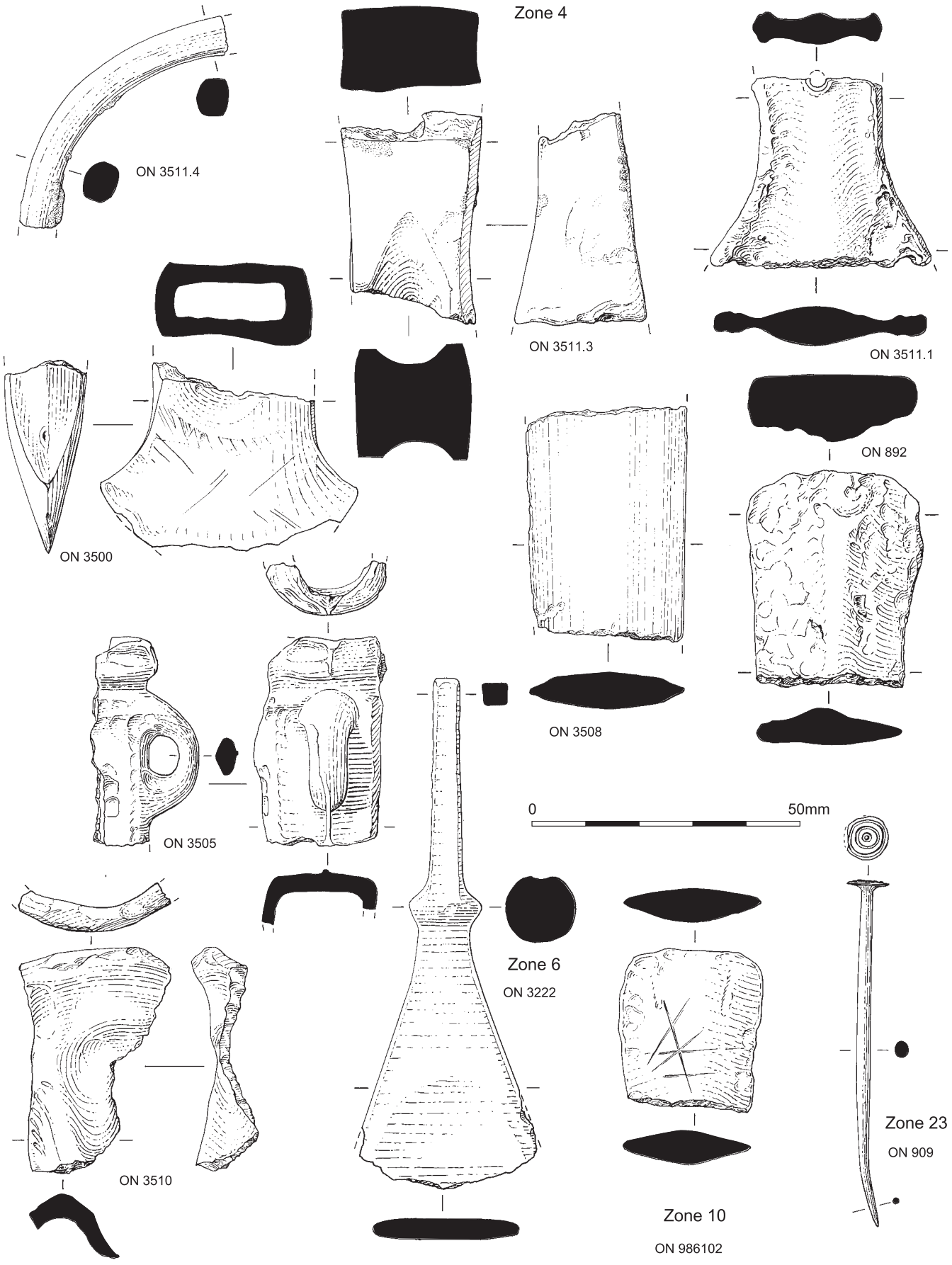


Fig 3.3 Objects from Late Bronze Age hoards in Zone 4, and three individual pieces of Late Bronze Age metalwork from Zones 6, 10 and 23

95m² was enclosed by the ditch, which had a shallow U-shaped profile (0.8m wide by 0.36m deep) with moderate, concave sides. This enclosure extended to the east into the area excavated in 2005.

Structures, pits and postholes

Towards the south of the zone were two possible post-built structures (127193 and 254145) (Fig 3.2). Structure 127193 was rectangular in plan and composed of eight postholes; the internal area of the structure was 9.5m². The postholes were similar in form with a maximum depth of 0.18m. A possible four-post structure 254145 (1m x 1m) was located *c* 10m to the north-west of 127193 and may have been contemporary. Relatively large quantities of Late Bronze Age pottery, including some burnt sherds, and charred wheat grain was recovered from the postholes. Located between these two structures was oval pit 254124, which contained a near-complete Late Bronze Age vessel and a copper alloy ingot fragment (ON 4701). Immediately to the north of the structures were three pits and four postholes also of Late Bronze Age date.

Hoards

Four hoards of Late Bronze Age metalwork had previously been found in the immediate vicinity of Zone 4, whilst two gold bracelets, one further hoard and fragments of a possible dispersed hoard were recorded during this phase of works (Pl 3.1). Together the hoards represent a unique assemblage in that all but that found in the late 19th century come from excavations and thus have an archaeological context. All are likely to have been deposited within the period between *c* 920–750 BC (see below).

The EKA2 hoard (VII), comprising 16 fragments of copper alloy objects (including pieces of socketed axe and sword, ONs 3505, 3510 and 3511.1) and ingots (Fig 3.3), was found at the base of the subsoil towards the northern end of the zone. The nature of this findspot is similar to that of the hoards found earlier west and to the south-east of Zone 4 (Hearne *et al* 1995; Andrews *et al* 2009). Four further objects were recovered 40m to the east of the hoard (III) recorded in the 1992 evaluation (Hearne *et al* 1995) and may have been dispersed parts of that hoard. Two gold bracelets (ON 880 and 881), of early first millennium BC date, were found at the northern edge of Zone 4 (Pl 3.9). Although unstratified, the bracelets are thought to have been a deliberately placed deposit (VIII) or part of such a deposit. Unfortunately the area where the bracelets were found was heavily disturbed by modern service trenches and landscaping associated with the original construction of the Weatherlees Pipeline, so whether or not they had been buried together, and possibly with other copper alloy objects, is unknown. Due to the nature of the recovery of the bracelets it is also unclear whether they had been placed within a shallow pit or survived at the base of the subsoil, as was the case with the earlier hoards.

No further objects were found associated with the previously discovered hoards adjacent to the east edge of the southern part of Zone 4, at the base of the subsoil within the alluvial deposit 172262 in that area (Andrews *et al* 2009).

Cremation cemetery 252229

Towards the southern end of Zone 4 was a cluster of unurned cremation burials and related features (group 252229, Fig 3.4), one of which (252215) contained Late Bronze Age pottery. In total there were 13 features within the group, 11 of which contained cremated bone and redeposited pyre debris. All of the features were characterised by having distinctly dark or very dark greyish brown/black silty loam fills which included some finely broken fragments of charcoal. Of the 11 contexts that contained cremated bone only two had sufficient material to be considered as unurned burials, features 252215 and 252223. Cremated bone from 252215 gave a radiocarbon determination of 1130–920 cal BC (2855±30 BP: SUERC-40267) and similar material from 252223 gave a radiocarbon determination of 1260–1010 cal BC (2925±30 BP: SUERC-40268), placing them in the Middle–Late Bronze Age. The remaining features contained cremation-related deposits, mainly redeposited pyre debris, but in relatively small quantities, and as such are not considered to be cremation burials. The features were located in a fairly small area (20m²) and most had shallow bowl-shaped profiles and contained single fills.

Parts of the area immediately surrounding the graves had been heavily truncated and no other features

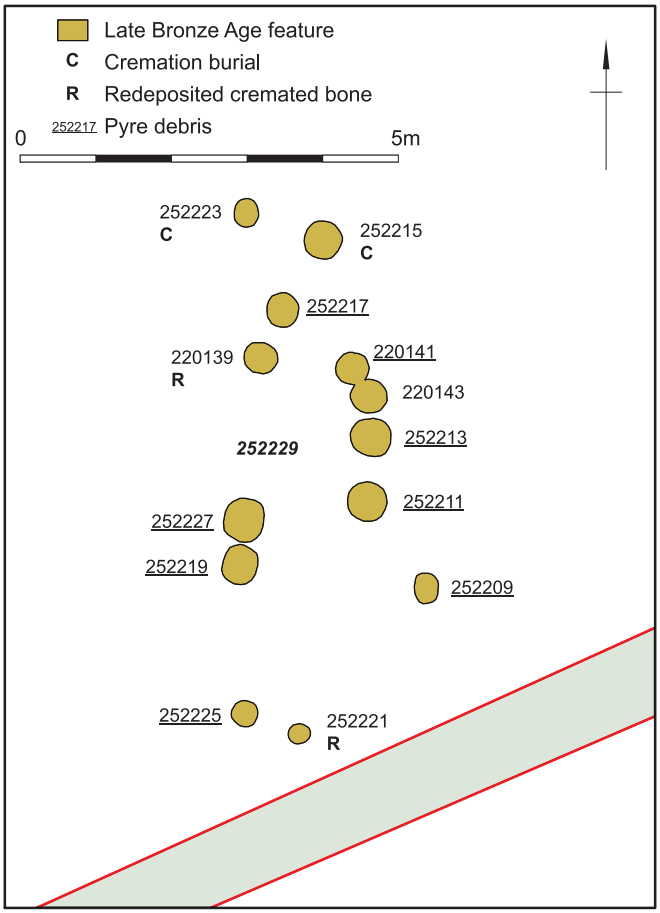


Fig 3.4 Plan of Late Bronze Age cremation cemetery 252229 (Zone 4)

survived, though it appears that 252229 may have been a relatively isolated group. However, the presence of a small ring-ditch less than 10m to the south-east, recorded in 1993 during construction of an access road, may be significant. The ring-ditch contained a polished axe but is otherwise undated, and though a Late Neolithic–Early Bronze Age date appears most likely a later, Middle Bronze Age date cannot be ruled out.

Grave catalogue

Grave 220139 (Burial 220140)
Not illus
Grave: Circular with steep straight sides – 0.48 x 0.42, 0.12m deep.
Human Remains: 0.9g ?redeposited cremated bone. Subadult/adult >13 yr.

Grave 220141 (Burial 220142)
Not illus
Grave: Sub-circular with gradual concave sides – 0.43 x 0.41m, 0.12m deep.
Human Remains: 18g ?redeposited pyre debris. Subadult/adult >18 yr.

'Grave' 220143
Not illus
Grave: Circular with steep straight sides – 0.50 x 0.40m, 0.07m deep.
Human Remains: None.

Grave 252209 (Burial 252110)
Not illus
Grave: Oval with straight near-vertical sides – 0.40 x 0.33m, 0.16m deep.
Human Remains: 11.3g redeposited pyre debris. Juvenile/subadult *c* 5–18 yr.

Grave 252211 (Burial 252212)
Not illus
Grave: Sub-circular with steep concave sides – 0.50 x 0.48m, 0.12m deep.
Human Remains: 11.4g redeposited pyre debris. Subadult/adult >13 yr.

Grave 252213 (Burial 252214)
Not illus
Grave: Sub-circular with moderate concave sides – 0.50 x 0.45m, 0.13m deep.
Human Remains: 3.8g redeposited pyre debris. Subadult/adult >13 yr.

Grave 252215 (Burial 252216)
Not illus
Grave: Circular with steep, straight sides – 0.50m diameter, 0.23m deep.
Human Remains: Unurned cremation burial. 425.3g cremated bone and redeposited pyre debris. Adult *c* 30–45 yr. ?Female.
Radiocarbon dating: 1130–920 cal BC (2855±30 BP, SUERC-40267).

Grave 252217 (Burial 252218)
Not illus
Grave: Sub-circular with moderate concave sides – 0.50 x 0.44m, 0.20m deep.
Human Remains: 1g redeposited pyre debris. Infant >5 yr.

Grave 252219 (Burial 252220)
Not illus
Grave: Sub-circular with steep straight sides – 0.51 x 0.45m, 0.15m deep.
Human Remains: 0.7g ?redeposited pyre debris. Infant *c* 0–5 yr.

Grave 252221 (Burial 252222)
Not illus
Grave: Sub-circular with moderate concave sides – 0.31 x 0.28m, 0.12m deep.
Human Remains: 1.2g cremation-related deposit. 1) Infant *c* 0.5–5 yr. 2) Subadult/adult >13 yr.

Grave 252223 (Burial 252224)
Not illus
Grave: Sub-circular with steep near-vertical sides – 0.38 x 0.30m, 0.21m deep.
Human Remains: ?Unurned cremation burial. 11.6g cremated bone and redeposited pyre debris. Infant *c* 1.5–4 yr.
Radiocarbon dating: 1260–1010 cal BC (2925±30 BP, SUERC-40268).

Grave 252225 (Burial 252226)
Not illus
Grave: Sub-circular with shallow concave sides – 0.34 x 0.32m, 0.08m deep.
Human Remains: <0.1g redeposited pyre debris. Infant >5 yr.

Grave 252227 (Burial 252228)
Not illus
Grave: Sub-circular with moderate concave sides – 0.58 x 0.51m, 0.10m deep.
Human Remains: 17.8g ?redeposited pyre debris. Adult *c* 25–45 yr.

Zone 6

Zones 6 and 7 are described separately here, but are considered together below in the discussion as they form part of the same Late Bronze Age 'site'. The principal excavated enclosure lay at the southern end of Zone 7 with trackways, fields and other enclosures to the south and north of this in Zones 6 and 7 respectively.

Bronze Age and earliest Iron Age

An isolated grave (170073) containing a cremation burial of Middle Bronze Age date (247151) was located in the central part of Zone 6 (see Fig 3.6). The cremated bone had been placed within an inverted vessel (Fig 3.5, 10). Ditch 249097, which defined the southern edge of a trackway of Early or Middle Iron Age date, and was located just to the north of the cremation burial, contained further sherds of Middle Bronze Age date, and these could have derived from additional disturbed burial urns (Fig 3.5, 14-15).

Grave catalogue

Grave 170073 (Burial 247151)
Not illus
Grave: Circular – 0.40m diameter, 0.40m deep.
Human Remains: Urned cremation burial, placed in inverted bucket-shaped jar (ON 3336) (Fig 3.5, 10). 30.5g cremated bone and redeposited pyre debris. Neonate 4–5mth.

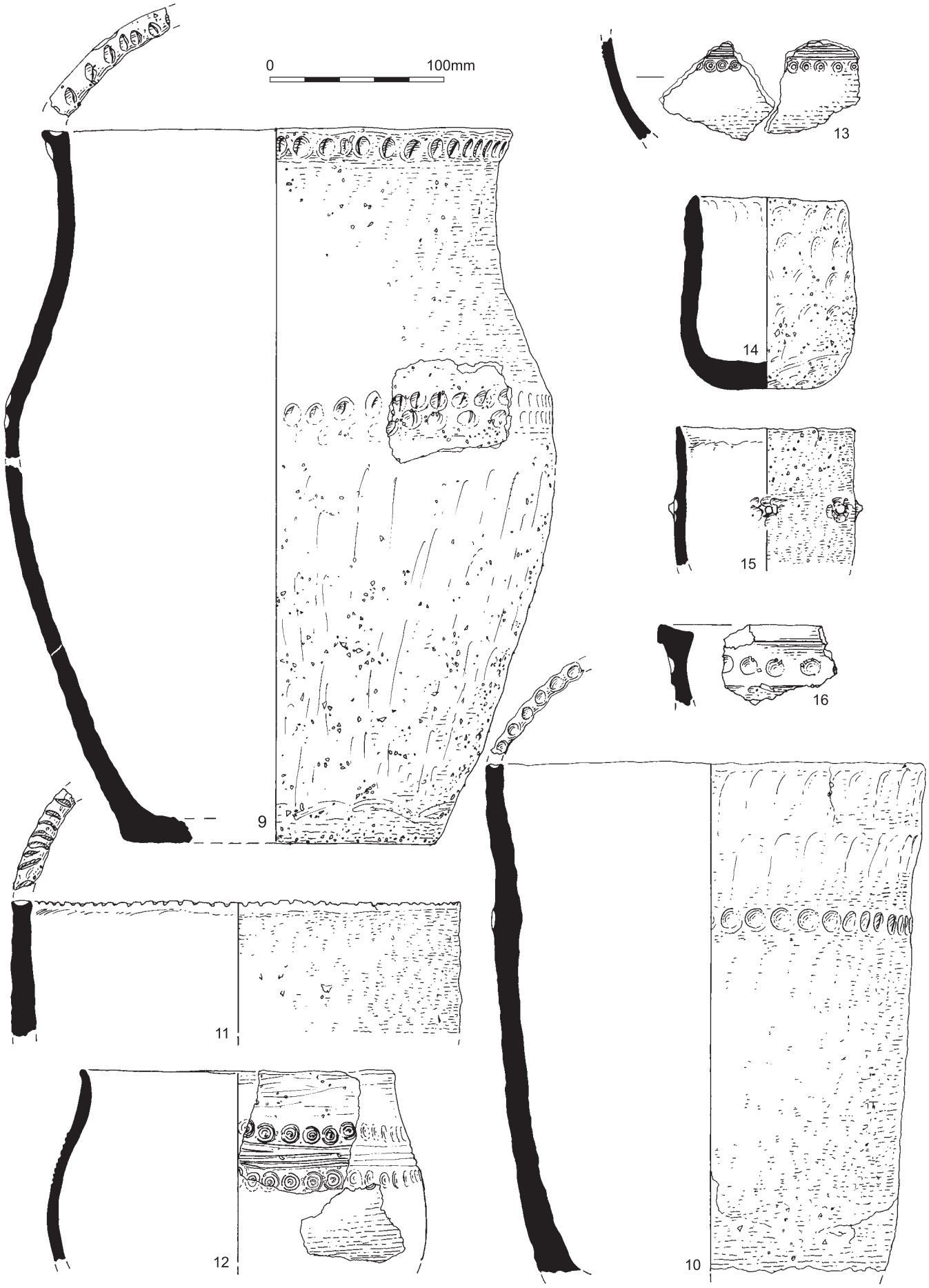
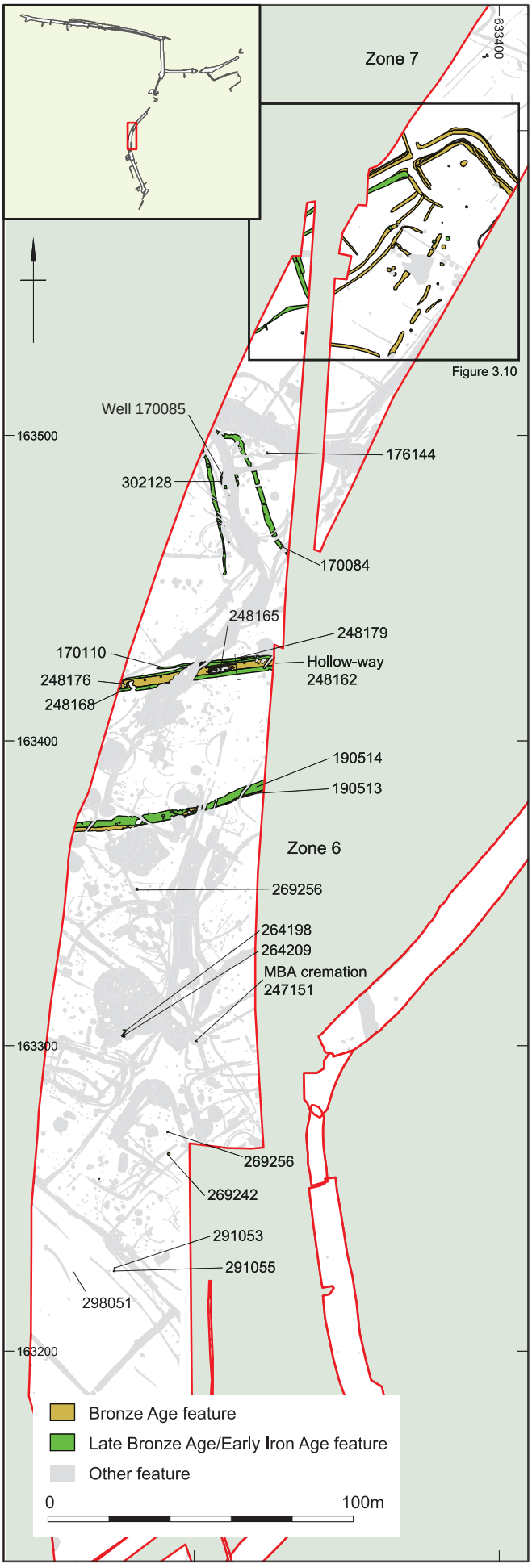


Fig 3.5 Middle Bronze Age pottery, including cremation urn (no. 10), found inverted in feature 170073 (Zone 6)



Southern boundary

An ENE–WSW aligned ditch (190513) and its recut (190514) represented a major boundary that was certainly present in the later Bronze Age, although its date of inception is unclear (Fig 3.6). The earlier of the two ditches, 190513, ran all the way across the zone, and had a slightly stepped concave profile which measured at least 1.55m wide and was up to 0.52m deep. Only a single tiny sherd of pottery, possibly Iron Age in date and if so surely intrusive, was recovered, along with a polished antler handle (ON 3283), other fragments of animal bone and struck flints. The ditch recut, 190514, followed the same alignment, but was considerably larger (up to 3.4m wide and 1.42m deep), and also exhibited a fairly steep-sided stepped profile. The ditch contained a series of fills, all indicative of gradual silting, which produced occasional animal bone fragments and struck flints, in addition to a few small pottery sherds of Late Bronze Age or Early Iron Age date. These ditches seem likely to have demarcated the southern boundary of the settlement of Late Bronze Age date that is focused on the northern end of this zone and the southern part of Zone 7.

Hollow-way

Near parallel to, and around 40m to the north of the boundary ditches, a flat based hollow-way (248162) ran for 51m, continuing beyond the limit of excavation to the east and west of the zone (Figs 3.6–7; Pl 3.2). The hollow-way was 0.75m deep and up to 2.4m wide, although its original width before truncation was unclear. The earliest surface of the hollow-way consisted of small rounded pebbles (of 10–20mm diameter) which formed a patchy yet consistent metalled surface which had been pushed into the top of the underlying natural, and included struck flints possibly of Early Bronze Age date. This basal surface was overlain by a thin layer of light brown silty sand (248163) which was up to 0.03m in depth and contained pottery which could only provide a broad Bronze Age date, and also a broken copper alloy pin with a slightly swollen head (ON 3869) which is likely to date to the Early Iron Age. This layer contained occasional pebbles similar to those in the metalling below, and is likely to have formed through the track's use. A patchy layer of slightly larger beach cobbles (248164) was then used to re-surface the hollow-way, and these were noted to have been displaced by the formation of a thin linear groove, (248165) 0.14m wide and up to 0.11m deep, which was probably the result of wear by cart wheels. The likely wheel rut infill and the upper metalled surface were overlain by a thick (0.58m) layer of homogeneous light greyish brown silty sand (248167) which contained no finds and very few inclusions of any kind, and which was sealed by an equally sterile fine sandy silt layer (248185). These upper fills did not appear to have formed through gradual silting, and a more rapid formation process, perhaps through flooding, seems a more plausible explanation.

Fig 3.6 Plan of Late Bronze Age features in Zone 6 and southern part of Zone 7

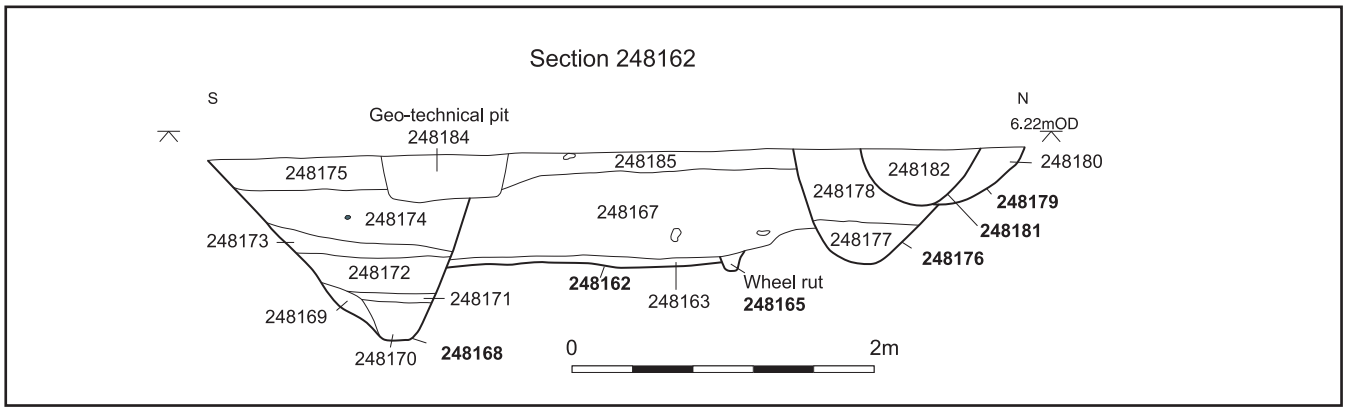


Fig 3.7 Section of hollow-way 248162 and associated Late Bronze Age ditches (Zone 6)

The upper fills of the hollow-way were cut by two parallel ditches approximately 2m apart which followed the same alignment as the underlying feature, and presumably re-established the route. The southern ditch (248168) was 1.45m wide and 1.23m deep with steep sides and a flat base, and had infilled through several episodes of gradual silting, none of which contained any datable finds. The cutting of this ditch may have removed any wheel rut corresponding to that (248165) uncovered to the north. The northern ditch 178176 (248176) had a similar profile to its southern counterpart, albeit with a more concave base, but was also considerably smaller and with a similar paucity of finds. The northern ditch was subject to partial recutting on two occasions, initially by ditch 248179, and ultimately by ditch 170110, neither of which contained any finds, but both of which are assumed to be of Late Bronze Age or Early Iron Age date due to their obvious association with the underlying hollow-way and also their early position within the stratigraphic sequence.

Enclosure

To the north of the hollow-way a pair of ditches formed an enclosure, the ditches similar in both size and morphology to those defining the settlement of Late Bronze Age to Early Iron Age date within the southern end of Zone 7. The easternmost ditch, 170084, ran in a NW–SE direction, turning fairly sharply to the west at

Pl 3.2 Late Bronze Age hollow-way 248612 (Zone 4; view from south-west)

its northern end, where it had suffered truncation. The ditch, which generally had a slightly irregular concave profile, lacked the fairly large amounts of pottery recovered from the ditches within Zone 7, and the few sherds that were recovered tended to be datable only to a prehistoric or ascribed a generic Iron Age date. Given the number of ditches of certain Iron Age date that also ran through this area these few sherds could easily be intrusive. The second, western ditch (302128) also contained small quantities of Iron Age pottery, but again was early within the stratigraphic sequence. The ditch ran in a nearly north-south direction, but with a slight kink at its southern terminal at which point the ditch ran at a right angle to the hollow-way and later flanking ditches.

Within the enclosure defined by ditches 170084 and 302128 an ovoid feature (170085), initially largely obscured by later ditches, proved on excavation to measure 8.3m by 5.8m and with a depth approaching 5m. The sides were too steep for the feature to be a waterhole for livestock, and an interpretation as a well seems more likely. However, despite the depth of the well no waterlogged remains were present in the environmental samples. Pottery recovered from the bluish grey clay of the lowest fill is likely to date to the Early Iron Age.

Ditches 169001, 262236 and 262217, 170081 and its recut 255021 at the extreme north end of the zone can also be seen a continuation of the Late Bronze Age/Early Iron Age settlement to the east of Ebbsfleet Lane in Zone 7. Ditch 262236 may be a continuation of 186227, or one of its predecessors, the upper fill of which contained a (probably intrusive) fragment of sub-rectangular copper alloy sheet (ON 4347) which had been pierced with two holes. Likewise, ditch 262217 could also be a continuation of one of the ditches of similar orientation within Zone 7. An isolated pit (126320) to the south of ditch 169001 contained 125 sherds (weighing almost 2 kg) of Late Bronze Age or Early Iron Age pottery, including sherds from an ovoid jar that may have been complete when deposited.

Other features from this phase are represented by scattered postholes and pits, which may provide tentative evidence for later Bronze Age settlement in Zone 6, but are more likely peripheral to the focus of occupation within the southern part of Zone 7. With a few exceptions these features were not securely dated. Towards the southern end of the zone two adjacent postholes or the bases of small pits (291053 and 291055, Fig 3.6) had diameters of 0.43m and 0.55m respectively and depths of 0.24m and 0.22m. Of the two only the latter contained any cultural material, struck flints and 12 worn pottery sherds of Late Bronze Age or Early Iron Age date, which could be residual. Around 13m to the west and more securely dated, a small pit (298051 with a diameter of 0.39m) contained 66 sherds of pottery of Middle or Late Bronze Age date. Also found towards the southern end of Zone 6, within the colluvium, was a tanged chisel (ON 3222) of Late Bronze Age type, possibly related to the hoard material recorded in Zone 4 (see above; Fig 3.3).

Further to the north two postholes (269256 and 269242) each contained a single sherd of Middle or Late Bronze Age pottery, but the sherds could be residual, and the inclusion of these features within this phase is tenuous. The same is true for pit 264209, the date again based on a single Late Bronze Age or Early Iron Age body sherd, and its neighbour, pit 264198, included due to its stratigraphic position. An isolated posthole 269256 located towards the centre of the zone contained a sherd of Middle or Late Bronze Age date. A few metres to the east of ditch 170084 a shallow circular pit, 176144, contained six sherds which derived from a single vessel of Late Bronze Age or Early Iron Age date.

Zones 7 and 8

Middle to Late Bronze Age

Towards the southern end of Zone 7 were two sides of an enclosure orientated NW–SE, defined by pairs of parallel ditches (ditches 201129, 201130, 201094 and 278102), possibly trackways, although in places the gap between the ditches was only 1.5m (Figs 3.8–9). Within the enclosed area was a curvilinear ditch (201096) which itself enclosed an area containing several undated short lengths of ditch, pits and tree-throw holes. Although the ditches contained some later material in their upper fills, ditch 201094 was cut by two pits (215146 and 215148) both of which contained large quantities of pottery of Late Bronze Age or Early Iron Age date. All of the enclosure ditches were cut by ditches of Middle to Late Iron Age date. The enclosure appears to be morphologically similar to that assigned a later Bronze Age date within Zone 14 to the north-east.

The alignment of the northernmost enclosure ditches was paralleled further up Cottington Hill to the north, where a series of four ditches seem likely to represent field boundaries. Ditch 201102 was the largest of the sequence, perhaps forming a significant boundary, and may have had a bank on the north-eastern side. Around 15m further north ditch 270060 terminated near the north-western limit of excavation. Further uphill ditch 193095 (Fig 3.9) ran through an area of intercutting ditches, and was cut by ditches of Iron Age date (see below). To the east in the earlier 2005 pipeline works (Egging Dinwiddy and Schuster 2009, 71) a ditch on a similar alignment may have been related, and contained pottery of Middle Bronze Age date.

The final ditch of this phase within Zone 7 was segmented and represented by ditches 135086, 201151, 216058 and 201150 (Fig 3.9). Whether the segmentation was intentional or a product of truncation is unclear, although the ditches were generally shallow, so perhaps the latter is more probable. Within Zone 8 the field system continued with a further trackway represented by ditches 165054 and 201166, although no finds were recovered from the fills of either ditch. To the north, ditch 165078 cut the southern barrow, terminating within the area defined by the ring-ditches, and contained nine sherds of pottery of Middle to Late Bronze Age date.

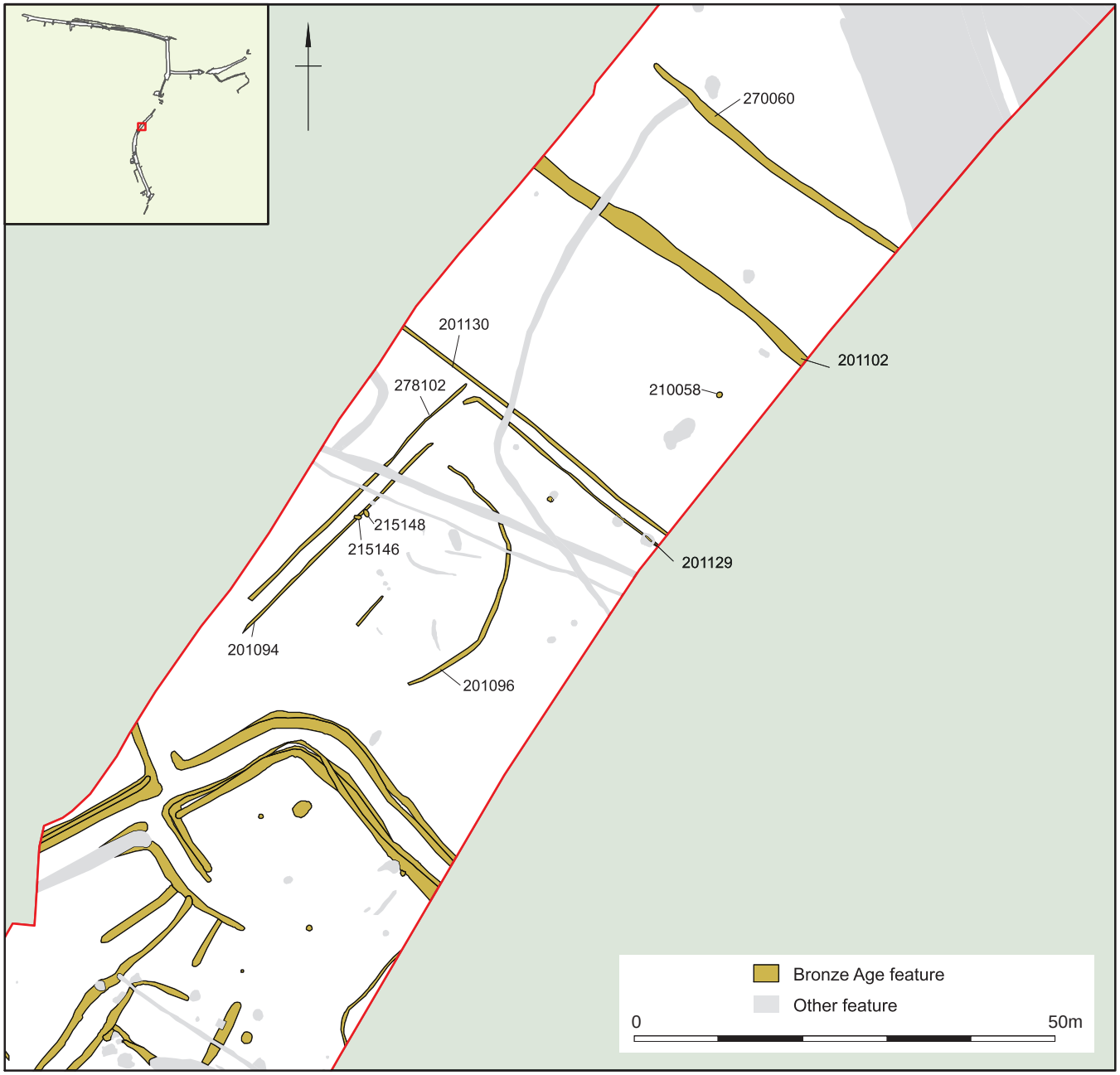


Fig 3.8 Plan of Middle Bronze Age–Late Bronze Age features in southern part of Zone 7

Towards the northern end of Zone 7 was an apparently isolated cremation burial (179102), which contained three small sherds of Middle or Late Iron Age pottery. However, these should be considered intrusive as cremated bone from feature 179102 gave a radiocarbon determination of 1260–1010 cal BC (2925±30BP, SUERC-40269), placing it in the Middle–Late Bronze Age.

Grave catalogue

Grave 179102 (Burial 179103)

Not illus

Grave: Circular – 0.45m diameter, 0.1m deep. Single mid-blackish brown silty loam fill with black charcoal patches.

Human Remains: Unurned cremation burial. 166.1g cremated bone. Adult *c* 20–35 yr. ?Female

Radiocarbon dating: 1260–1010 cal BC (2925±30 BP, SUERC-40269).

Late Bronze Age

Towards the south of Zone 7, running beneath Ebbsfleet Lane and into the extreme northern end of Zone 6 was a substantial enclosure, only the northern part of which was located within the excavation. The enclosure was bounded on both the north-west and north-east sides by pairs of ditches which may have defined trackways, or alternatively contained central banks. Within the enclosed area a series of smaller ditches and a possible trackway defined trapezoidal- or rectangular-shaped areas, which were often internally subdivided by shorter lengths of ditch (Fig 3.10).

The external enclosure ditches 186236 (and recut 186237) and 186229 (recut 186228), and the internal ditches 186230 (recuts 186231 and 186232) and 201113 (recuts 186154 and 186227), generally had steep-sided U-shaped profiles, but were noted to have

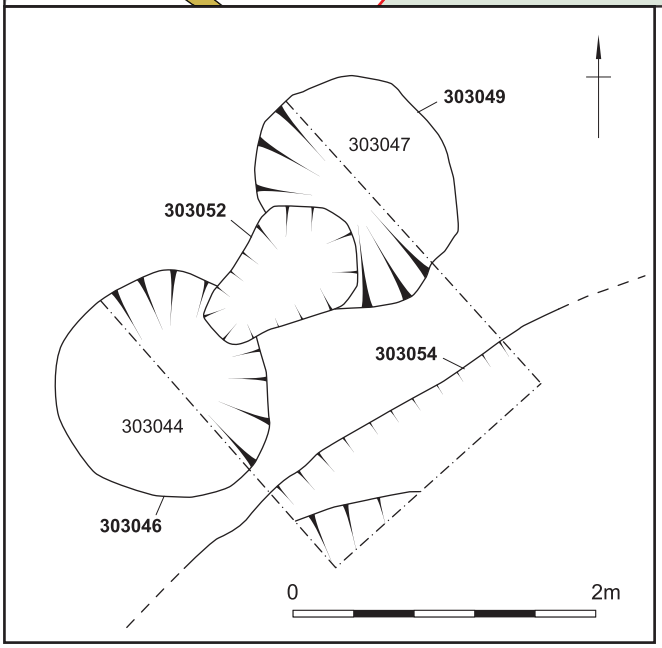


Fig 3.9 Plan of Middle Bronze Age–Late Bronze Age features in northern part of Zone 7

been more flared in profile and with flatter bases in places. To the south-west, within Zone 6, the enclosure was bounded by ditch 170081 (and a partial recut 255021). All of the ditch fills seemed to be derived from gradual silting, but episodes of deliberate infilling are likely to have taken place as fairly large amounts of Late Bronze Age pottery and occasional struck flints were recovered from all of the ditches. Animal bone was less well represented, and generally consisted of fragmentary teeth, indicating that other less robust bone types did not survive.

The external pairs of ditches within Zone 7 defined a 'dog-legged' entrance into the enclosure from the north-west, and internally NE–SW ditches 201092 (which terminated within ditch 201113) and 201091 defined a potential trackway. The enclosure was further sub-divided by ditches 201128, 239083, 262251, 267081,

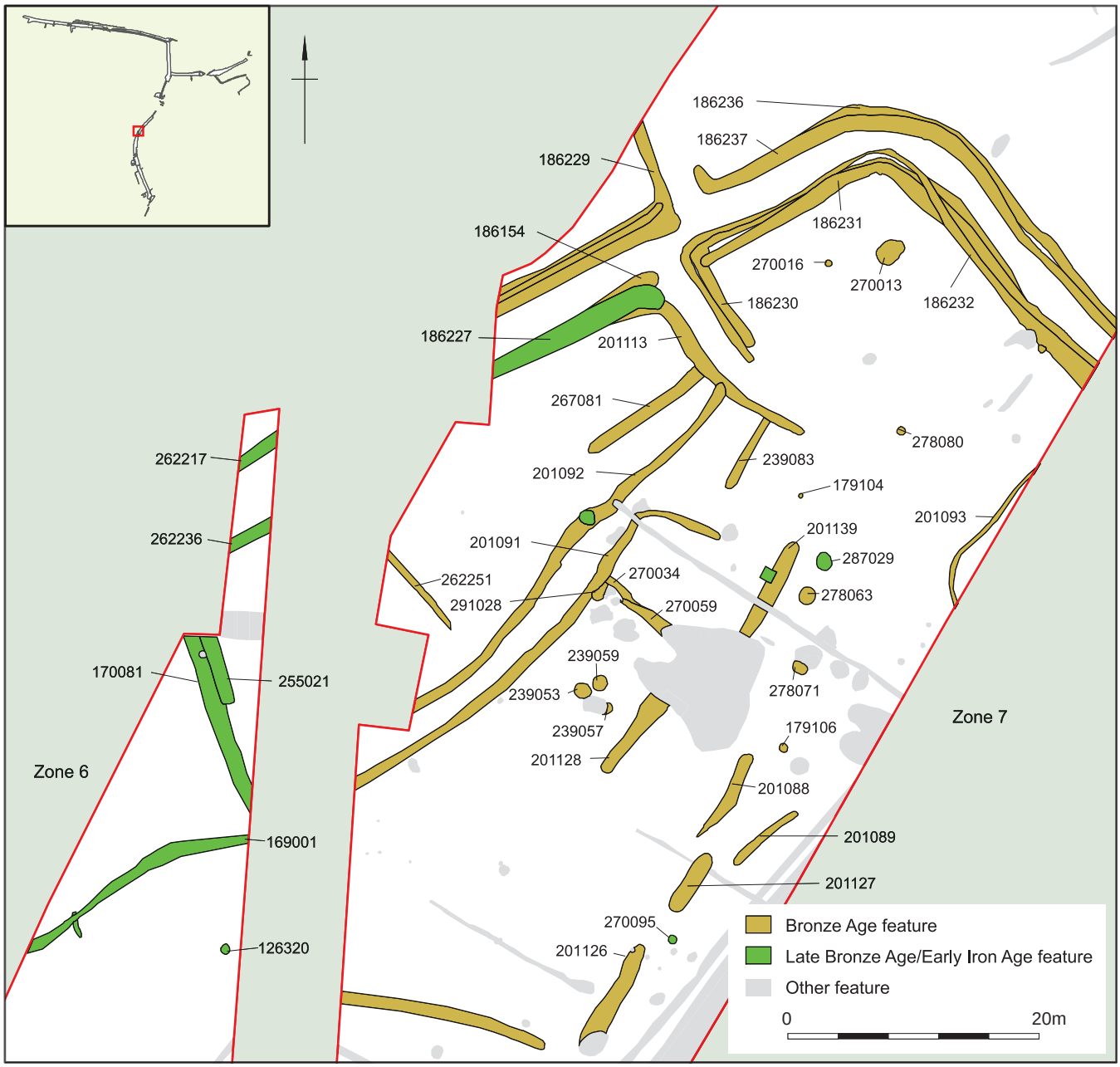


Fig 3.10 Plan of Late Bronze Age enclosure at southern end of Zone 7

270059 and 291139. A curvilinear ditch (201093), adjacent to the eastern baulk is certainly of the same date, and defined a further subdivision of the enclosure beyond the limits of the excavation.

Ditches 201126, 201127, 201088 and 201089 (Fig 3.10) are less easily assigned to phase; all contained Late Bronze Age pottery within their basal fills, but later pottery (of Iron Age and Early Roman dates) was recovered from their terminals.

Within the enclosure several pits (239059, 239053, 239057, 278063, 278071, 287029, 179104, 179106, 278080 and 270013) all contained Late Bronze Age pottery and varying quantities of animal bone and struck or burnt flint. Pit 270013 contained 70 sherds of pottery weighing 967g.

Although no evidence for buildings was uncovered (only a single posthole (270095) can be confidently assigned to this phase), the amount of pottery of Late Bronze Age date recovered (760 sherds, about 5.2kg) makes it likely that this was a settlement site, maybe contemporary with that within Zone 14, and perhaps associated with the deposition of the hoards of metalwork uncovered in Zone 4 at the neck of the Ebbsfleet peninsula to the south. The settlement seems likely to have existed for some time, with the external ditches recut, sometimes twice, and some of the pottery (from ditch recut 186227 and ditch 170081 in Zone 6) of Late Bronze Age or Early Iron Age date.

Up to 200m to the north-east of the enclosure three isolated pits and a tree-throw hole (210058, 243053, 282031 and 303023, Figs 3.8 and 3.9) contained pottery of Late Bronze Age date. A possible oven or crop dryer consisting of two sub-circular bowl-shaped pits (303046 and 303049) connected by what may have been a flue (303052) (Fig 3.9) also contained a small number of pottery sherds of this date. A similar feature

(154113, 154117 and 154119) 70m to the north-east was undated but cut earlier Bronze Age ditch 165054. Neither of the possible ovens or crop dryers contained traces of burning, or deposits of charred remains, though both were of characteristic 'hour-glass' shape and approximately 0.5m deep. Feature 303046/49/52 was also constructed on the line of an earlier boundary, between ditch segments 201150 and 216058 (see above), perhaps still surviving as an earthwork, and lay within 12m of a cluster of postholes and pits to the south-east (see below). To the north-east, two adjacent pits (215146 and 215148) were cut through the fill of earlier Bronze Age trackway ditch 201094 Fig 3.8). These pits contained 40 and 55 sherds respectively of Late Bronze Age or Early Iron Age pottery.

A cluster of postholes and pits survived within an area of relatively dense Late Iron Age activity (Fig 3.9) (see below). The postholes (136144, 282047, 282035, 178169, 178173, 282045, 179130, 179127 and 159147) all contained varying amounts of Late Bronze Age pottery, struck and burnt flint and occasionally animal tooth fragments. Pits 178177, 159143, 179149, and 179117 contained similar assemblages, with 2.4kg of pottery (115 sherds) from the latter. Furthermore, pit 159256 in the same area, which contained Early–Middle Iron Age pottery, provided two radiocarbon determinations on naked barley grains, of 1010–830 cal BC (2770±35 BP, SUERC-40741) and 910–790 cal BC (2680±35 BP, SUERC-40740, (see below) respectively, placing this deposit in the Late Bronze Age. It seems likely that this concentration of features within a fairly small area and the amount of finds may also be indicative of settlement, but that the intensity of later Iron Age activity has removed much of this evidence.

A bent and twisted gold object (ON 2711), only 0.1mm thick and decorated with repoussé ridges and punched dots, has been identified as a possible Late Bronze Age 'lock-ring' (Vol 2, Fitzpatrick, Chap 2). It was found by metal detector and came from the surface of Iron Age ditch 193099.

Zones 9, 10 and 11

Middle Bronze Age

An isolated pit (197101) was located towards the southern part of Zone 10 (at the base of Sevenscore, Fig 3.39), the upper fill of which (197106) contained six sherds of Middle Bronze Age pottery and a few small abraded fragments of fired clay. The pit was cut by ditch 194097, which in addition to five sherds of Middle or Late Iron Age pottery, contained 21 sherds (188g) which derived from three ring-stamped fine ware bowls (Fig 3.5, 12–13). These vessels, of the Birchington bowl type, are extremely rare, and previously only four examples of single sherds have been recovered from Thanet, generally from within enclosure ditches. These sherds were recovered from the ditch fill immediately above the pit, and it seems plausible that they may have originated within the pit, later eroded out into the ditch.

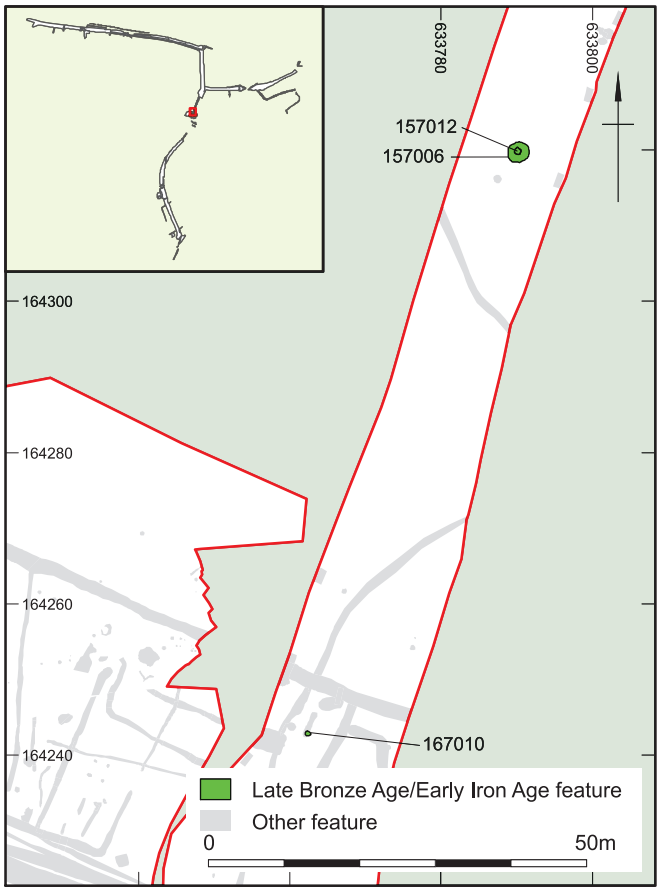


Fig 3.11 Plan of Late Bronze Age and Late Bronze Age–Early Iron Age features in Zone 10

An isolated urned cremation burial (153017, see Fig 3.41) was present within the eastern arm of Zone 11, placed in a small circular pit, with the rim of the inverted vessel sitting on the bottom of the cut. The base of the vessel had been truncated, probably by ploughing, and it survived up to a height of 0.24m.

Grave catalogue

Grave 153017 (Burial 153020)

Not illus

Grave: Circular cut flush with cremation urn – 0.24m diameter, 0.24m deep.

Human Remains: Urned cremation burial in inverted bi-partite urn (ON 415) (Vol 2, Fig 8.1, 8). 156.7g cremated bone and redeposited pyre debris. Juvenile *c* 4–7 yr.

Late Bronze Age–Early Iron Age

Features of this broad date range were scarce within these zones (Fig 3.11), but possibly included a well situated towards the base of the slope within Zone 10, and containing three sherds of Late Bronze Age or Early Iron Age pottery. The well, 157006 (and possible recut 157012), measured 2.2m in diameter and was excavated to a depth of 2m, though augering indicated that it was somewhat deeper. The fills were a mixture of fairly clean deposits derived from the slumping of the feature sides, and episodes of deliberate backfilling which contained oyster and mussel shell and animal bone (perhaps of Anglo-Saxon date). A small pit (167010, 0.66m in diameter and 0.46m deep) within the south of Zone 10 also

contained three sherds of pottery of Late Bronze Age or Early Iron Age date and a flint flake core.

Other ditches assigned to this phase may be the remnants of field systems, but are fairly disparate and located within both Zones 10 and 11. It is likely that some of the unphased ditches, or those believed to be of prehistoric date, could be of Bronze Age/Early Iron Age date, but this cannot be supported by any finds or stratigraphic data. The ditches that did contain material of this date are 168008, a west-east aligned ditch within Zone 10 which had a flat base and gently sloping sides, 190428 (see Fig 3.40), a curvilinear ditch at the extreme south of Zone 11, and 190410 (see Fig 3.40) within the eastern arm of Zone 11. All three ditches also contained small quantities of struck flint, including some Bullhead pieces which could be residual.

Pit 225001 within Zone 11 was ovoid in plan and contained a single sherd of Late Bronze Age or Early Iron Age date, and pit 218162 (see Fig 3.40), one of a cluster of shallow, undated pits, contained four sherds of a similar date. In addition, pit 227001, towards the extreme east of Zone 11 (see Fig 3.41), contained two sherds of Late Bronze Age or Early Iron Age pottery.

Metal detecting produced a fragment of what may be a Late Bronze Age tanged or socketed knife (ON 986102) from the colluvial layer that covered Zone 10 (Fig 3.3). A copper alloy possible ingot fragment (ON 986134) found within the same layer may also be of Late Bronze Age date.

Zone 12

Middle to Late Bronze Age

The small number of features assigned to this period probably formed part of an agricultural settlement perhaps spanning the Middle to Late Bronze Age. The majority of the features were found in the western part of the zone and comprised several ditches, gullies, pits and three cremation burials. In addition, several of the Iron Age linear features towards the eastern end of the zone contained small quantities of residual Bronze Age pottery, with a relatively large assemblage from ditch 190130 (see below), the latter having possibly disturbed a Bronze Age feature.

At the western end of the zone were two gullies and at least three small, partly-segmented ditches. Gully 148044 curved in an arc, terminating to the east and truncated by an Iron Age ditch to the west. This gully was 14m long, 0.6m wide and 0.3m deep, and contained a relatively large amount of Middle Bronze Age pottery. Just to the east of gully 148044 was a sub-oval pit 214001, 1.7m long, 1.5m wide and 0.5m deep. This contained a similar fill to 148044 and a further 55 sherds of Middle Bronze Age pottery, as well as a small amber bead, possibly a residual Early Bronze Age object (see above).

The remaining ditches have been dated to the Late Bronze Age, the period of use of some possibly extending into the Early Iron Age. These ditches include 147066, 190179, 190181, 190185 and 175027, all at the west end of the zone, which had an average width of 1.2m and a depth of 0.5m. Late Bronze Age–Early Iron Age ditch 147066 defined the western extent of the Bronze Age features, with the other Late Bronze Age features forming an apparently related group (possibly a small enclosure) approximately 30m to the east. Ditches 190179 and 190185 were both aligned north-south, perhaps forming the eastern boundary of the Bronze Age enclosure. Ditch 190185 was cut by 156054, a short length of ditch on an east-west alignment, and this was itself cut by north-south ditch 190181. Ditch 175027 to the west was probably also part of this group.

Feature 202079 was a large sub-circular tree-throw hole, 2.5m wide and 0.6m deep, located in the middle of the zone. It contained 28 sherds of Middle to Late Bronze Age pottery. Although this is unclear, it is probable that Iron Age ditch 190154 terminated just short of 202079.

Pit 214076 was located towards the eastern end of the zone, along the southern edge of the site. It was sub-rectangular with a maximum length of 3.36m and 0.5m deep. This feature was initially thought to be a sunken-featured building, but after full excavation has been interpreted as a shallow pit.

There were three Bronze Age unurned cremation burials (126001, 146016 and 214042) in Zone 12 (Fig 3.12). Feature 219031, which appeared to belong to the western group, contained 43 sherds of Late Bronze Age pottery but no cremated bone, and may have been a cenotaph rather than a burial. In contrast, the three unurned cremation burials, all with very dark greyish brown silty fills, contained cremated human bone but no secure dating evidence. However, bone from cremation burial 126001 gave a radiocarbon determination of 1020–840 cal BC (2790±30 BP, SUERC-40276), and bone from cremation burial 146016 a radiocarbon determination of 1010–840 cal BC (2785±30 BP, SUERC-40277), placing both in the Late Bronze Age.

Grave catalogue

Grave 126001 Burial 126002

Not illus

Grave: Oval with moderate concave sides – 0.75 x 0.65m, 0.38m deep.

Human Remains: Unurned cremation burial. 359g cremated bone. Adult >18 yr. + ? intrusive infant.

Radiocarbon dating: 1020–840 cal BC (2790±30 BP, SUERC-40276).

Grave 146016 Burial 146013–15

Not illus

Grave: Sub-circular with gentle concave sides – 0.55m diameter, 0.22m deep.

Human Remains: Unurned cremation burial. 81.5g cremated bone and redeposited pyre debris. Adult >18 yr.

Radiocarbon dating: 1010–840 cal BC (2785±30 BP, SUERC-40277)

Grave 214042 Burial 214043

Not illus

Grave: Irregular in plan, moderate concave sides – 0.65 x 0.65m, 0.31m deep.

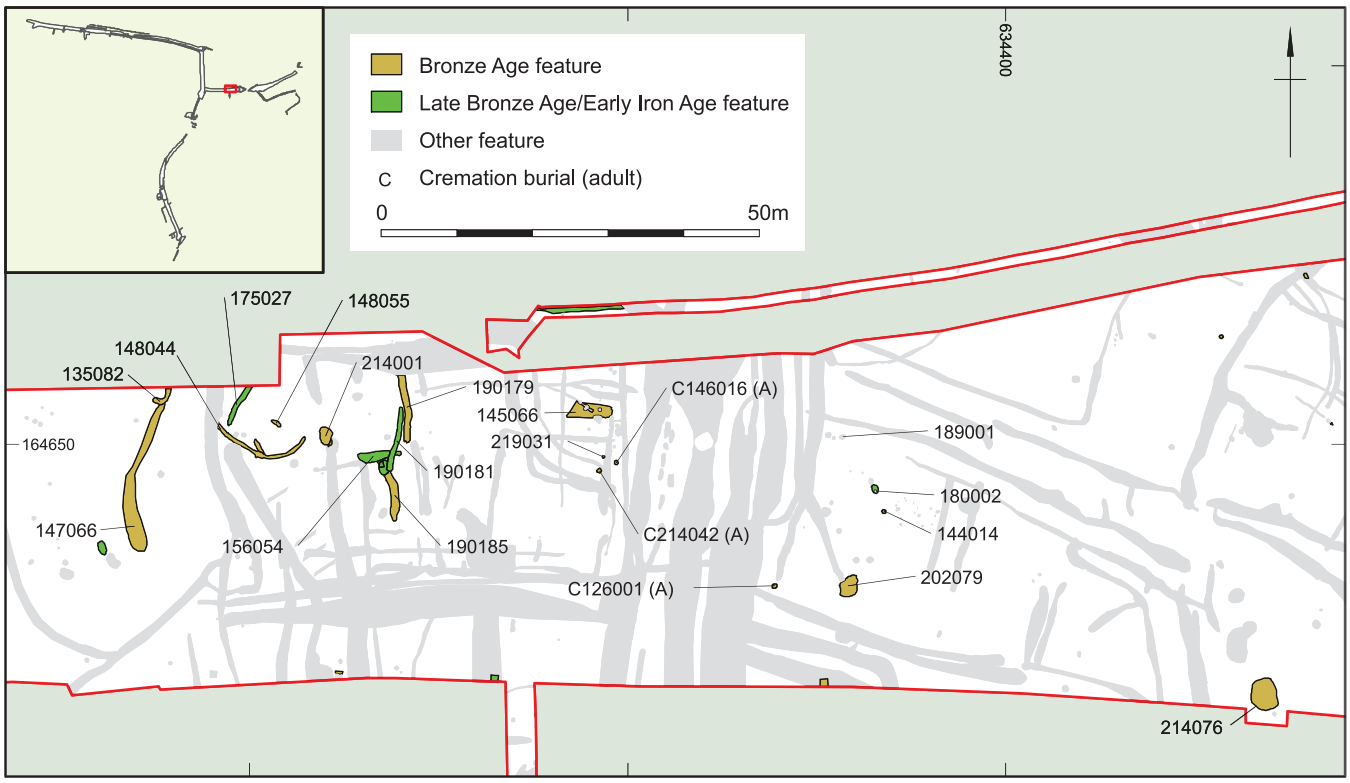


Fig 3.12 Plan of Middle–Late Bronze Age features in Zone 12

Human Remains: ?Urned cremation burial. 160.7g cremated bone and redeposited pyre debris. Adult >18 yr.

Zones 13, 14 and 26

Middle Bronze Age

Zone 13

In Zone 13 Middle Bronze Age activity was limited to a series of inhumation burials placed in or between the ditches of the Early Bronze Age barrows (see Fig 2.11). Between the ditches of Barrow 1, grave 203001 contained an inhumation which gave a radiocarbon determination of 1610–1430 cal BC (3230±30 BP, SUERC-40298) and grave 221014 contained an inhumation which gave a radiocarbon determination of 1530–1410 cal BC (3210±30 BP, SUERC-40300). In addition, a small quantity (4.4g) of cremated bone of a *c* 25–35 week old foetus was recovered from a shallow cut (186135) in the upper fill of the barrow ditch.

The partially-silted ditch of Barrow 2 was cut by grave 200090 (see Fig 2.13; Pl 3.3). This grave contained an inhumation which gave a radiocarbon determination of 1420–1220 cal BC (3055±30 BP, SUERC-40297).

Pl 3.3 Middle Bronze Age burial 200090 in ring-ditch 134100 (Barrow 1) (Zone 13; view from south)

Grave catalogue

Grave 200090 (Burial 200089)

Fig 3.13

Grave: E–W, sub-oval cut tapered to the east with steep sides and flat base – 1.80 x 0.95m, 0.38m deep. Brown silty clay fill, rare medium and very frequent very small chalk inclusions.

Human Remains: Burial is flexed on left hand side. *c* 98% skeletal recovery. Adult *c* 60–80 yr. Male.

Radiocarbon dating: 1420–1220 cal BC (3055±30 BP, SUERC-40297).

Grave 203001 (Burial 203002)

Fig 3.13

Grave: SE–NW, sub-rectangular with steep sides and flat base – 1.03 x 0.63m, 0.13m deep. Dark greyish brown silty clay fill, rare medium and very frequent very small chalk inclusions.

Human Remains: Burial is crouched on right hand side. *c* 34% skeletal recovery. Adult >20 yr. ?Female.

Radiocarbon dating: 1610–1430 cal BC (3230±30 BP, SUERC-40298).

Grave 221014 (Burial 221016)

Fig 3.13

Grave: SE–NW, sub-rectangular with steep sides and flat base – 1.00 x 0.65m, 0.27m deep. Light to mid- greyish brown silty clay fill, abundant chalk inclusions.

Human Remains: Burial is crouched on right side. *c* 68% skeletal recovery. Adult *c* 35–45 yr. Female.

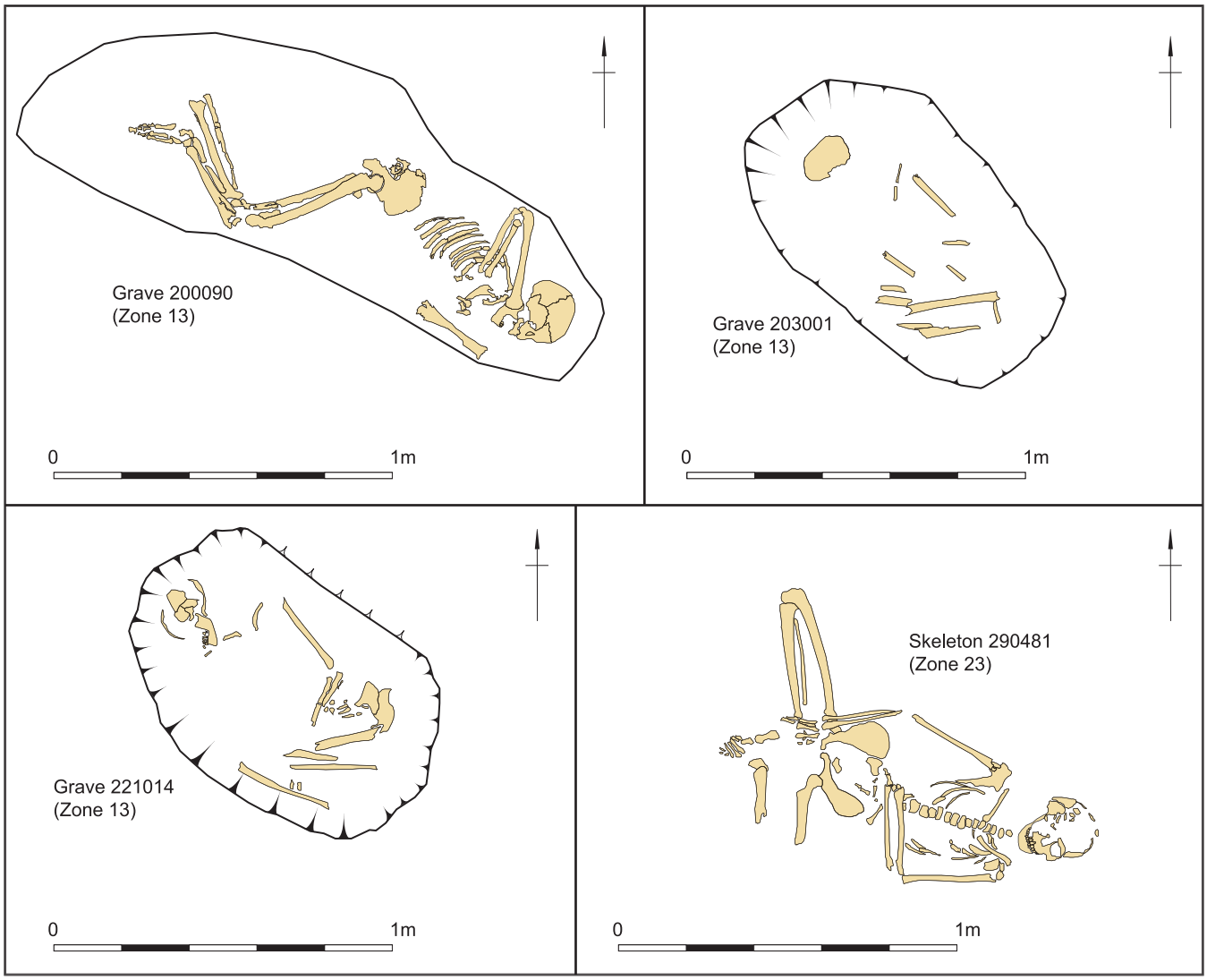


Fig 3.13 Grave plans of Middle Bronze Age burials 200090, 203001, 221014 (Zone 13) and 290481 (Zone 23)

Radiocarbon dating : 1530–1410 cal BC (3210±30 BP, SUERC-40300).

Zone 14

Several undated pits and other features within the area defined by a large D-shaped enclosure of probable Late Bronze Age or Early Iron Age date (see below) may predate the use of the enclosure. One (166051) was a small truncated pit containing an unurned cremation burial. Cremated bone from this feature was dated to 1420–1260 cal BC (3060±30 BP, SUERC-40279).

Grave catalogue

Grave 166052 (Burial 166051)

Not illus

Grave: Sub-circular with moderate concave sides – 0.55m diameter, 0.12m deep.

Human Remains: Unurned cremation burial. 370.2g cremated bone and redeposited pyre debris. Adult *c* 18–30 yr.

Radiocarbon dating: 1420–1260 cal BC (3060±30 BP, SUERC-40279).

Zone 26

Two adjacent pits (213001 and 222001: Fig 3.14; Pl 3.4) towards the northern end of the zone each contained a truncated Middle Bronze Age pottery vessel. Pit 222001 contained the lower third of a jar with a markedly bi-concial profile (Fig 3.5, 9) within which was the base of a second thin-walled, curving-profiled jar. Pit 213001 was immediately adjacent and contained the base of a highly truncated jar. No form could be reconstructed.

Both vessels had been placed on their bases in very closely-fitting pits. The truncated state of both means that their original contents did not survive, but neither one was associated with any cremated human bone, indicating that these were not urned cremation burials. No other contemporary evidence was located. The pair of vessels lay approximately in the centre of a rectilinear ditched enclosure which has no artefactual evidence to date it (stratigraphic associations place it before the Iron Age). While it is far from certain, this enclosure and the trackway (201045/201046) and ditches (201047, 201049) that form it could comprise parts of a field system established during the Middle Bronze Age.

At the southern end of the zone a single ditch (201062) crossed the trench from north to south. While its dating is again uncertain, one of the lower fills contained five sherds of Middle or Late Bronze Age

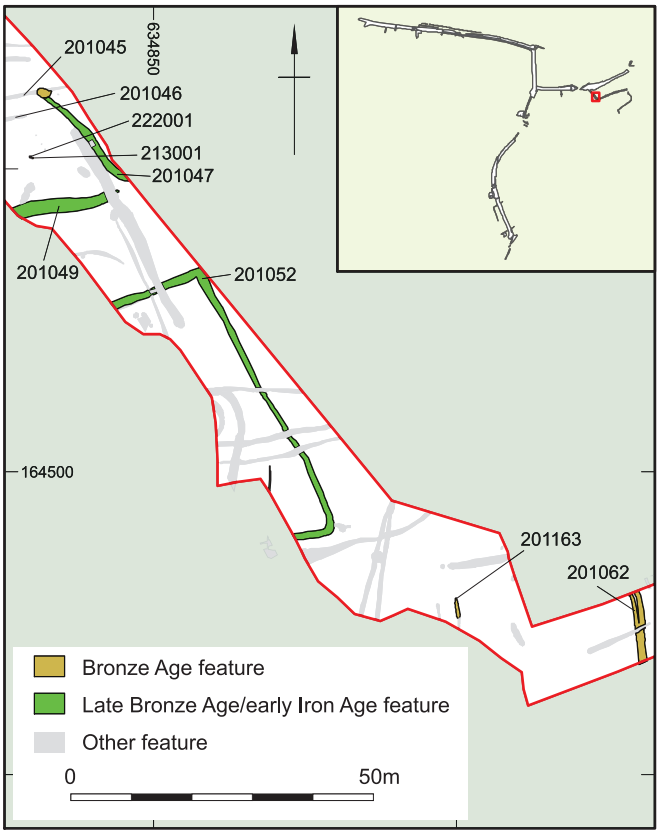


Fig 3.14 Plan of later Bronze Age and Late Bronze Age/Early Iron Age features in Zone 26

pottery (other fills contained only very small crumbs of later material), suggesting that it too could be a part of a putative early system of fields and enclosures.

Late Bronze Age–Early Iron Age

Zones 13 and 14

Palisade ditch

A linear feature (134095) aligned NE–SW entered the zone north-east of ring-ditch 134096. Some 0.5m north of that feature the ditch turned south-east and terminated abruptly. Three metres to the south-east the ditch continued for another 12m, cut into the top of the partially filled ring-ditch. A continuation of the ditch for at least 50m to the north of Zone 13 is indicated by a cropmark visible on aerial photographs (Fig 3.15).

The full length of the ditch was excavated, primarily by continuous offset half sections (Pl 3.5). The feature was generally in the region of 1.6m wide and 1m deep, with a flat base and steeply sloping sides (Fig 3.15). The longitudinal section showed evidence for the presence of irregularly spaced posts of substantial size, in the order of 0.4–0.5m diameter, most of which (and especially the largest) appear to have been withdrawn.

This feature – part of a palisade of considerable size – was not very securely dated. Stratigraphic relationships with ring-ditch 134096 (which it cut) provided a *terminus post quem* in the Early Bronze Age and trapezoidal enclosure 134099 (which cuts it) provided an Early to Middle Iron Age *terminus ante quem*. The fills of the palisade ditch itself were almost sterile: only a few scraps of later prehistoric pottery, some triangular brick fragments and animal bone were recovered from the uppermost fill, all likely to be of Middle Iron Age or later date. A single sherd of Early Iron Age pottery weighing 68g was recovered from the thin basal fill. This came from a neutral-profiled bowl with a simple rim and burnished exterior. The sherd was in good condition and was the best indication of a date for the creation of the palisade in the 7th or 6th century BC.

Field systems and enclosures

The palisade would clearly have formed a major and significant boundary. What it separated from what is very difficult to assess, not least because so little of the area north-west of the palisade lay within Zone 13. To the east, however, were a series of field boundaries, enclosures and other features indicative of a farmed and settled landscape. Many features that might have formed parts of this landscape are undated, only seemingly

Pl 3.4 Middle Bronze Age pits 213001 and 222001 (Zone 26; view from south)

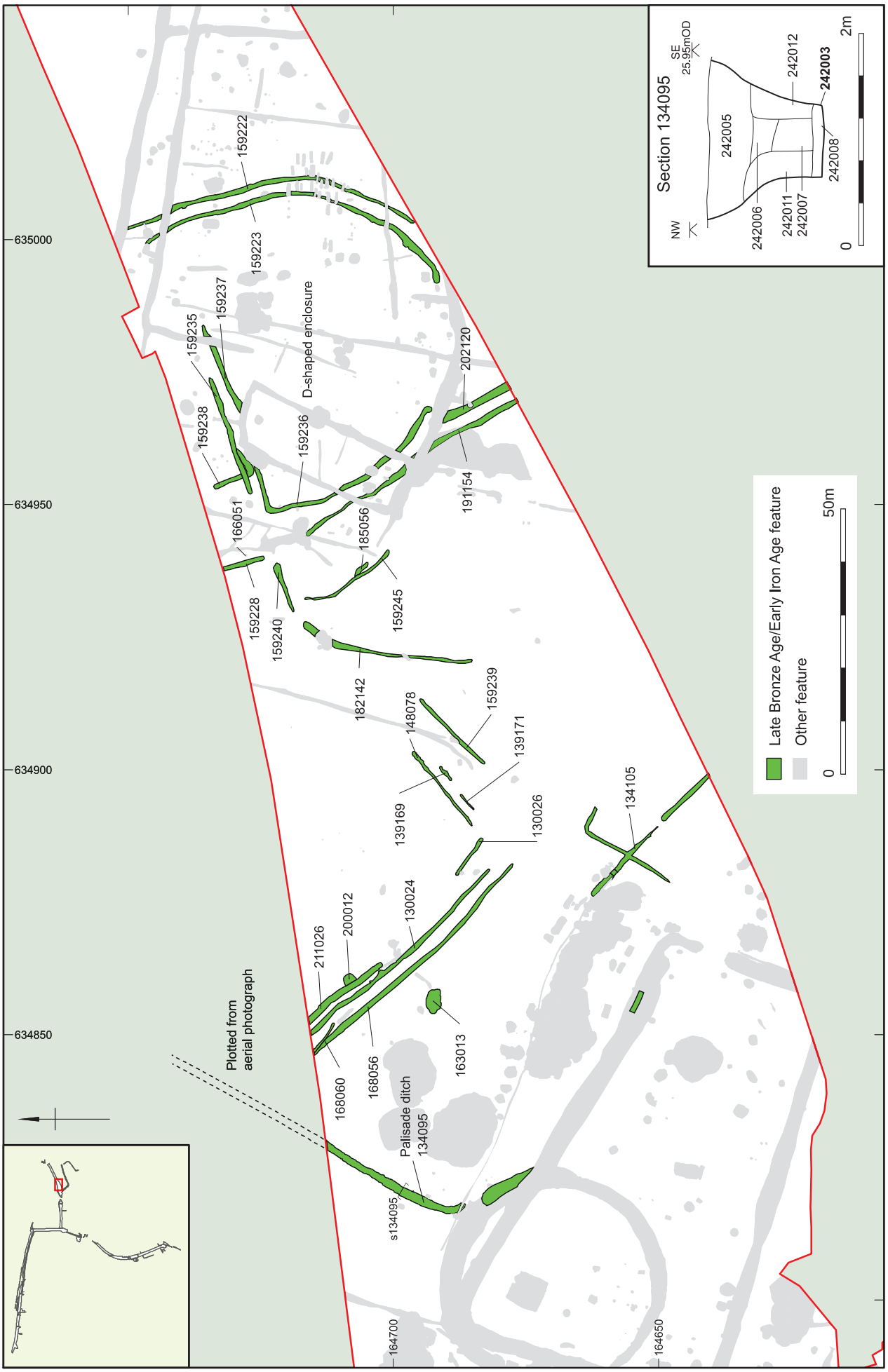


Fig 3.15 Plan of later Bronze Age and Late Bronze Age/Early Iron Age features in Zones 13 and 14

Pl 3.5 Late Bronze Age/Early Iron Age palisade ditch 134095, with ring-ditch 134100 (Barrow 1) in background (Zone 13; view from north)

related to the field systems and enclosures because of morphology or alignment. In other cases, there are firmer indications of date. The southern end of the palisade, for instance, was cut by a narrow ditch (134104, see below) which continued eastwards for some 77m, broadly parallel to the later trapezoidal enclosure. At its eastern end, this gully cut a rectilinear arrangement of ditches (134105) which are therefore probably Early Iron Age.

Further east in Zone 14 a group of ditches (168056, 168060, 130024 211026, 130026, 148078, 139171, 139169 and 159239) arranged at right angles to each other shared the same alignment as 134105. Of these, ditch 168056 contained a very small amount of Early Iron Age pottery. These ditches seemed to lead towards a large double-ditched D-shaped enclosure (159222–3, 159235–6 and 159237) with associated field boundaries (159228, 159238, 159240, 159245, 182142 and 185056) and double-ditched trackways (191154 and 202120). The ditches rarely exceeded 2m in width and 1m in depth and most were only a metre or so wide and less than 0.5m deep. The elements of this enclosure system were almost entirely undated, but field boundary ditch 182142 was cut by four pits (188027, 188033, 188038 and 159190) which contained Early to Middle Iron Age pottery, suggesting an Early Iron Age or possibly Late Bronze Age date for the enclosure.

West of the enclosure, some undated ditches (173057, 136077, 191111 and 191189) may have been outlying elements of an associated field system. A pit (220024) contained an urned cremation burial, comprising a large (truncated) jar, base down in the pit, containing bone from an infant.

Grave catalogue

Grave 220024 (Burial 220025)

Not illus

Grave: Oval with moderate concave sides – 0.55 x 0.41m, 0.08m deep.

Human Remains: Urned cremation burial. 13.9g cremated bone in large jar. Infant *c* 3–4 yr.

Other features

Pit 163013 contained animal bone, shell and 33 sherds weighing 1011g derived from at least four Early Iron Age vessels represented by body sherds, bases, shoulders (one with a finger pressed cordon; one with nail crescents; one with nail impressions; one stepped) and rims.

Zone 26

Elements of a possible Late Bronze Age or Early Iron Age field system were present in the centre of the zone (Fig 3.14), consisting of part of a possible enclosure (201052) dated solely by its stratigraphic relationships with Iron Age features, and short lengths of ditch aligned approximately east-west (201049) or NW–SE (201047) perhaps broadly contemporary with the D-shaped enclosure in Zone 14. Undated ditches 201045 and 201046 may have been contemporary. These last four features are entirely undated, and could have originated in the Middle Bronze Age.

At the north end of the zone, pit 158029 (Fig 3.46) contained substantial quantities of Late Bronze Age or Early Iron Age pottery along with shell, animal bone, fired clay and other apparently domestic waste. A second pit (188014) which cut ditches 201047 and 201045 contained Late Bronze Age pottery.

Zone 19

Late Bronze Age

The southern side of a probable oval or sub-circular enclosure was exposed along the northern edge of Zone 19, extending beyond the limit of excavation, and occupying a slight knoll of higher ground on Thorne Hill (Fig 3.16). The enclosure was approximately 65m in length and was defined by three segments of ditch of varying length and size (126229, 190382, 126230; the segments were up to 3m in width and 1.5m in depth). The profiles of the ditches were similar throughout, with moderately steep, straight sides and broadly flat bases, although in some sections the base was much narrower than in others (Pl 3.6a–c). The fills were mostly light coloured sandy silts with frequent inclusions of chalk lumps derived from the underlying geology. A pattern of increased early deposition from the northern side of the ditches was seen in several sections, suggesting that there was a bank on this side. Most of the pottery recovered from the easternmost segment (126230) was of Late Bronze Age or Late Bronze Age–Early Iron Age date, but the later fills also contained significant amounts of pottery assigned dates of Early–Middle Iron Age, Middle Iron Age, Middle–Late Iron Age and Late Iron Age, demonstrating that the ditch was being infilled throughout

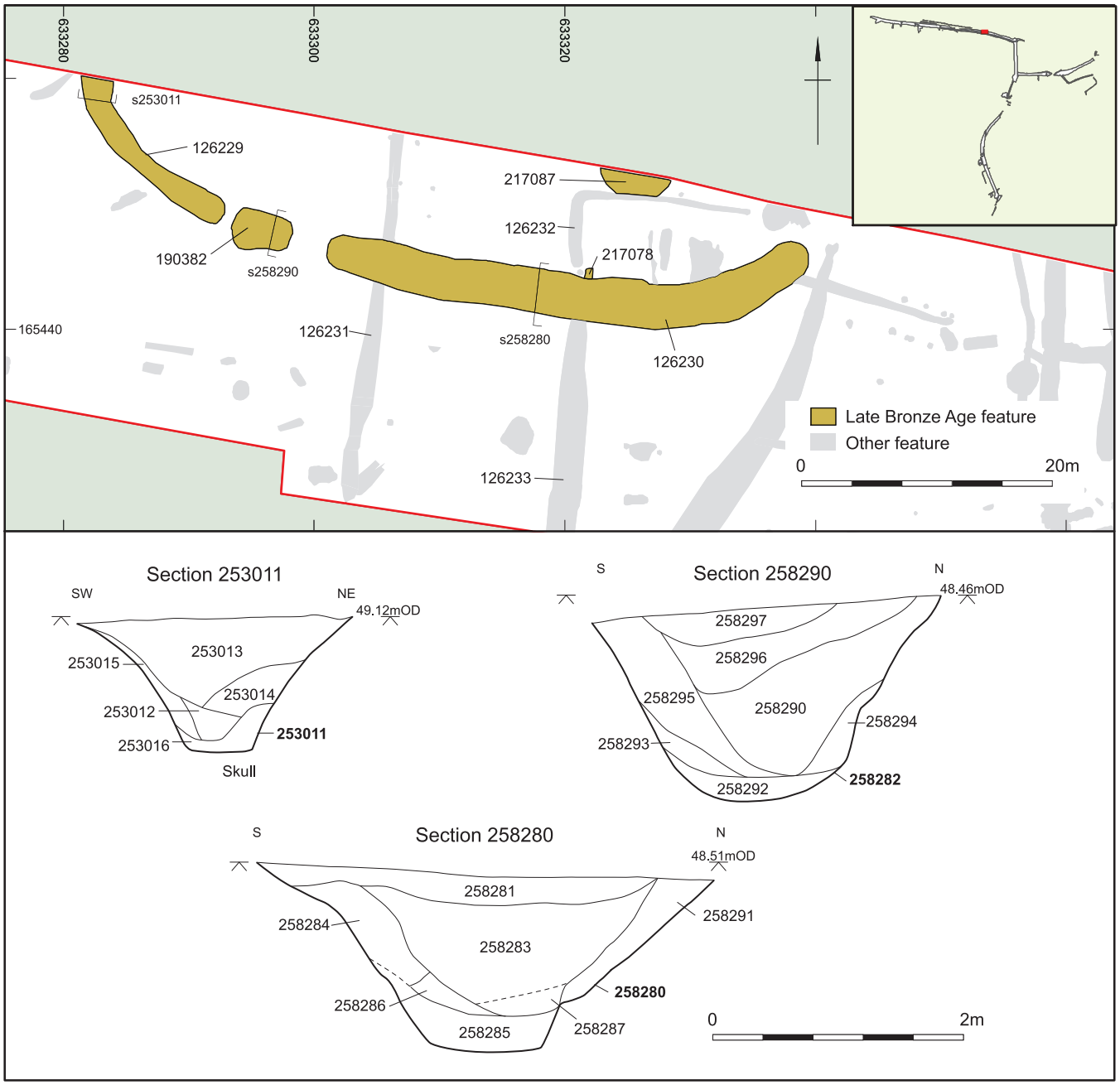


Fig 3.16 Plans and sections of Late Bronze Age segmented enclosure 126229/126230/190382 (Zone 19)

Pl 3.6 Late Bronze Age ditch 126230 etc; sections a) east segment, b) central segment, c) west segment (Zone 19; views from east)

the Iron Age period, when it would still have been a visible feature in the landscape. Segments 190382 and 126229 contained only pottery of Late Bronze Age date. The westernmost segment (126229) was narrower and shallower and may have been a second phase feature, perhaps closing an earlier broad causeway. This ditch also contained a fragment of human cranium (adult >40 year old ?female) in one of the lower fills (253012; Fig 3.16), which may have been a placed deposit. Other finds from the fills included moderate amounts of animal bone (cattle and sheep/goat) and shell (mainly mussel and some oyster), the latter in a notable concentration in the base of the western segment, below the cranial fragment. This suggests that the fills also contained food or processing waste along with naturally accumulated silting deposits.

The only possible contemporary feature within the excavated area of the enclosure was 217087, a large,

Pl 3.7 Middle Bronze Age barrow 232168 (Zone 21; view from north-west)

shallow pit-like feature most of which lay beyond the northern edge of the excavated area. Feature 217087 may have been sub-circular, and was approximately 6m long and 0.5m deep with gently sloping sides. It contained Late Bronze Age and Early–Middle Iron Age pottery but its association with the enclosure is not certain; its size and morphology does not suggest that it was a sunken-featured structure.

Zones 21–24

Middle Bronze Age

Barrow 232168

Barrow 232168 lay in Zone 21 to the north-east of Early Bronze Age ring-ditch 216090 and was much smaller Figs 3.17–8; Pl 3.7). It had a diameter of only 6m and the surrounding ditch was narrower (up to 1.2m in width) and shallower (up to 0.38m in depth) than the other ring-ditches. The ditch had moderately-sloping straight sides and a flat base, and was excavated by hand in a series of longitudinal sections. The artefactual assemblage from the ditch was relatively small, including undiagnostic worked flint and a small amount of pottery of Early to Middle Iron Age date from the upper fill. In the centre was grave 126180, containing an unaccompanied inhumation burial which provided a radiocarbon determination of 1410–1200 cal BC (3040±35 BP, SUERC-40714), thereby placing it in the Middle Bronze Age.

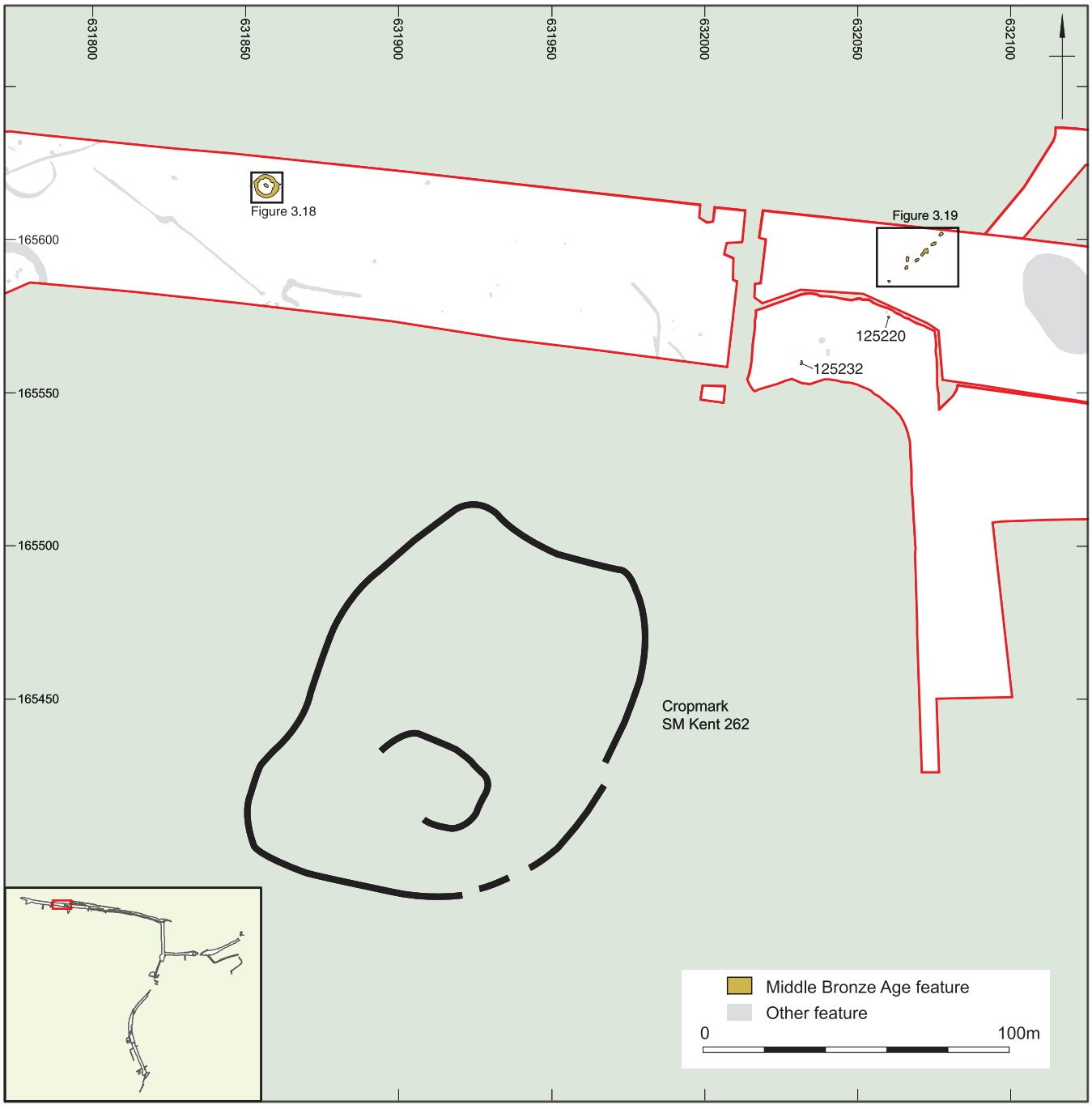


Fig 3.17 Plan of Middle–Late Bronze features in Zone 21

Grave catalogue

Grave 126180 (Burial 126181)

Fig 3.18

Grave: NW–SE, oval with shallow to moderate straight sides, flat base – 1.6 x 0.96m, 0.2m deep (base at 48.9mOD). Fill not specified.

Human Remains: Burial is crouched, facing south-west, probable gap of 0.2m between head and north-west end of grave. *c* 87% skeletal recovery. Adult *c* 40–55 yr. Male.

Radiocarbon dating: 1410–1200 cal BC (3040±35 BP SUERC-40714).

Late Bronze Age

North of Early Bronze Age ring-ditch 194137 in Zone 21 was a group of six unaccompanied inhumation burials that lay in a line on a NE–SW alignment, which may have continued beyond the northern limit of excavation (Fig 3.19). None of the graves intercut, and a further burial lay a short distance to the north-west. This latter burial (220053), in grave 220051, was radiocarbon dated to the Early Bronze Age (2130–1890 cal BC (3265±35 BP, SUERC-40718), whilst an urned cremation burial south of and on approximately the same alignment as the group of six inhumation burials provided an Early–Middle Bronze Age date (see above). However, a radiocarbon determination of 1060–840 cal BC (2810±35 BP, SUERC-40719) from the burial in grave 275007 places it in the Late Bronze Age, and it is likely that the other five burials in the line are of a similar date; therefore this group is described and discussed here. Their arrangement may reflect the previous existence of a hedge or bank here of which no evidence has survived. All of the burials were crouched or flexed, but there was no other consistent pattern to the disposition of the bodies. However, of particular interest (and probable significance) is that all six of the burials appear to have been adult males.

Grave catalogue

Grave 136103 (Burial 136102)

Fig 3.19

Grave: NE–SW, very irregular cut oval cut with steep, straight sides, irregular concave base – 3.12 x 1.76m, 0.36m deep (base at 46.93m OD). Fill of mid-yellowish brown sandy silt loam.

Human Remains: Burial is flexed, facing south-east, probable

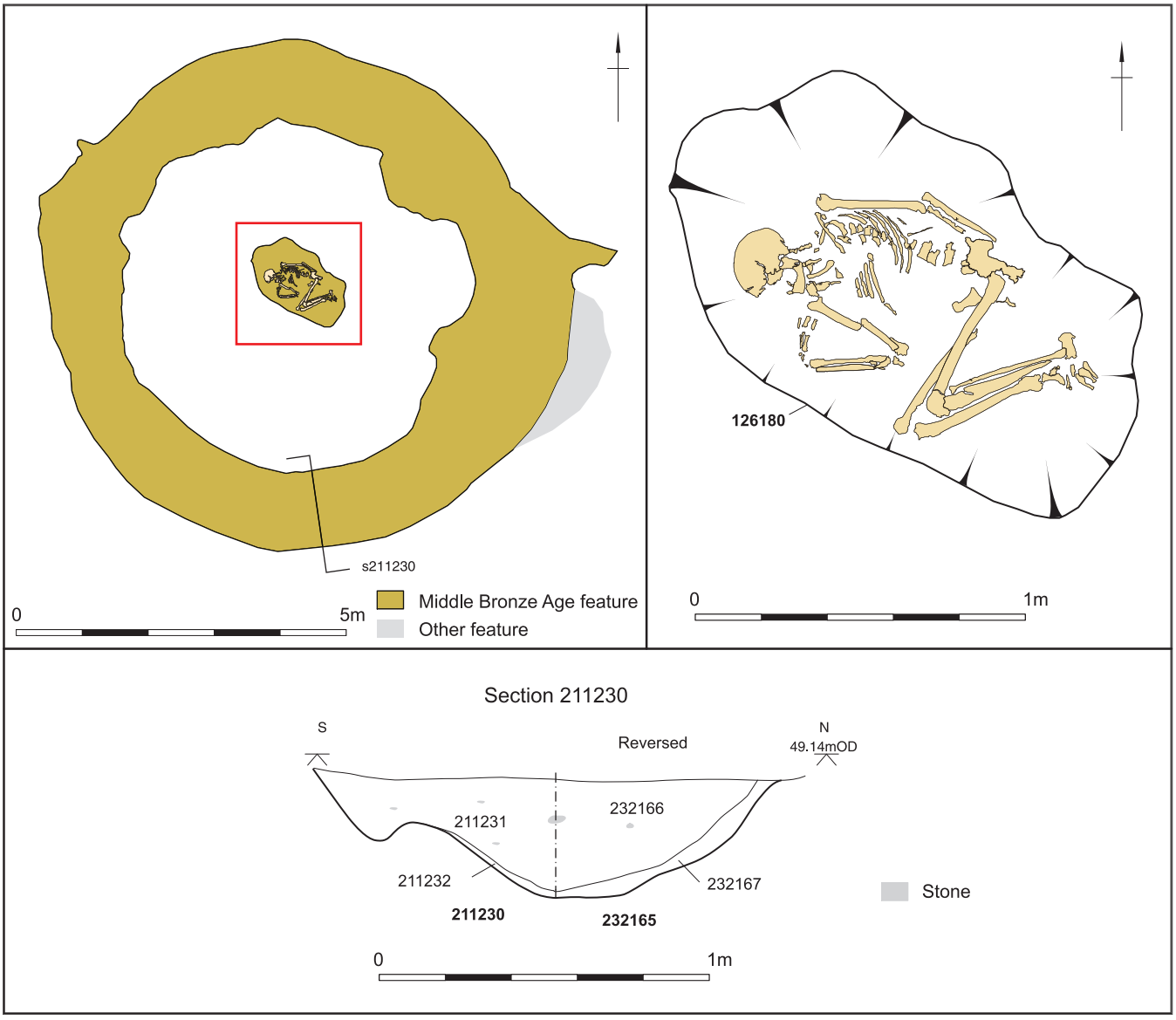


Fig 3.18 Plan and section of Middle Bronze Age barrow 232168 (Zone 21)

Fig 3.19 Grave plans of Late Bronze Age burials in Zone 21

gap of 0.5m between head and north-east end of grave. *c* 80% skeletal recovery. Adult *c* 35–45 yr. Male.

Grave 136106 (Burial 136105)
Fig 3.19
Grave: NE–SW, sub-rectangular with shallow to moderate irregular sides, irregular concave base – 1.91 x 0.93m, 0.29m deep (base at 47.02m OD). Fill of mid-yellowish brown sandy silt loam with frequent gravel inclusions.
Human Remains: Only part of the skeleton remains, position not known, probable gap of 0.1m between head and south-west end of grave. *c* 12% skeletal recovery. Adult *c* 30–40 yr. Male.

Grave 153066 (Burial 153065)
Fig 3.20
Grave: NE–SW, oval with shallow irregular sides, irregular base – 1.42 x 0.9m, 0.16m deep (base at 47.15m OD). Fill of mid- to dark brown clay loam.
Human Remains: Burial is flexed, facing north-west, probable gap of 0.1m between head and north-east end of grave. *c* 48% skeletal recovery. Adult > 50 yr. Male.

Grave 166093 (Burial 166094)
Not illus
Grave: NE–SW, oval with shallow irregular sides, irregular base – 0.8 x 0.65m, 0.06m deep (base at 47.22m OD). Fill of mid-brown silty loam with frequent chalk inclusions.
Human Remains: Burial position not known. *c* 6% skeletal recovery. Adult > 18 yr. ?Male.

Grave 166097 (Burial 166098)
Fig 3.20

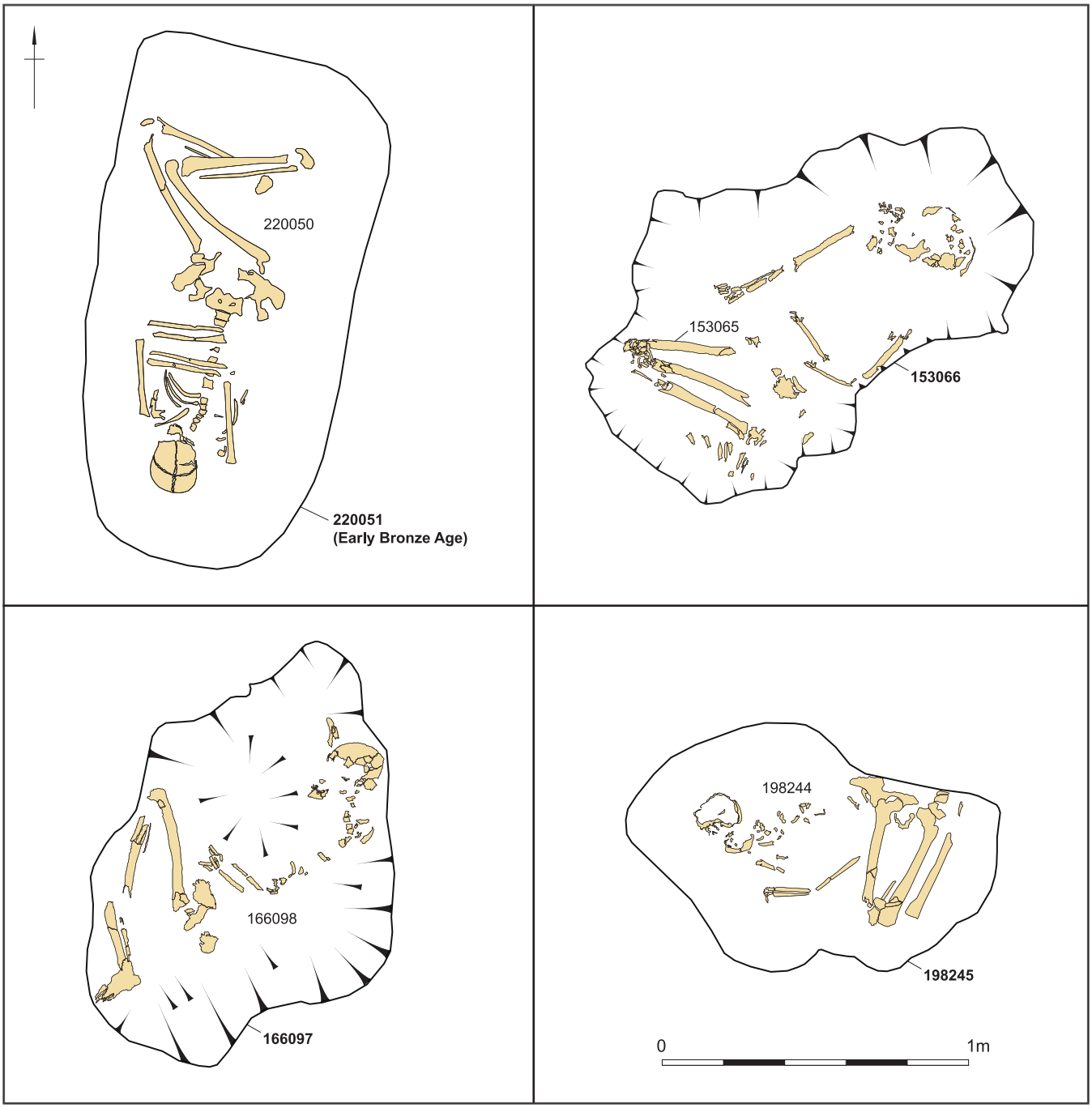


Fig 3.20 Grave plans of Early Bronze Age burial (220051) and Late Bronze Age burials in Zone 21, and Late Bronze Age burial 198245 in Zone 24

Grave: NE–SW, irregular oval cut with shallow irregular sides, irregular base – 1.45 x 1.5m, 0.13m deep (base at 47.15m OD). Fill of mid-brown silty loam with frequent chalk inclusions.
Human Remains: Burial is crouched, facing north-west, head against north-east edge of grave. *c* 40% skeletal recovery. Adult > 55 yr. Male.

Grave 275007 (Burial 275009)
Fig 3.19
Grave: NE–SW, sub-rectangular with moderate irregular sides, irregular base, 1.53 x 1.02m, 0.28m deep (base at 47.05m OD). Fill of mid-brownish yellow silty loam with gravel and chalk inclusions.
Human Remains: Burial is crouched, facing south-east, probable gap of 0.1m between head and south-west end of grave. *c* 90% skeletal recovery. Adult *c* 24–29 yr. Male.
Radiocarbon dating: 1060–840 cal BC (2810±35 BP, SUERC-40719).

In Zone 24 a further, single unaccompanied inhumation burial (198244) was found in grave 198245 (Fig 3.20), and was probably related to the activity recorded to the south on the Tothill Services site, which also included a small group of Late Iron Age–early Roman burials (Canterbury Archaeological Trust 2004; Gollop and Mason 2006). However, burial 198244 provided a radiocarbon determination of 1120–910 cal BC (2840±35: SUERC-40724), placing it in the Late Bronze Age, and thus broadly contemporary with quarry pit 141137 approximately 2m to the south-west (see Fig 2.18). This had been partly exposed and excavated during the earlier excavations, when the remains of at least one human burial were recorded.

Grave 198245 (Burial 198244)
Fig 3.20
Grave: E–W, very irregular cut with steep straight sides, irregular base – 2.1 x 0.8m, 0.35m deep (base at 47.35m OD). Fill of mid- brown silty loam with frequent chalk inclusions.
Human Remains: Burial is flexed, facing south, probable gap of 0.1m between head and west end of grave. *c* 85% skeletal recovery. Adult >55 yr. Female
Radiocarbon dating: 1120–910 cal BC (2840±35: SUERC-40724).

Part of the northern edge of quarry pit 141137 (see below) was exposed in 2010 and excavation showed it to be steep-sided and over 1.1m in depth. The feature was not bottomed but two of the sequence of six fills contained pottery of Late Bronze Age date, and a small amount of animal bone was also present.

Discussion: The development of the landscape – Middle–Late Bronze Age *by A P Fitzpatrick*

One of the defining characteristics of the later Bronze Age in southern England (ie, the Middle and Late Bronze Age combined) is the large scale organisation of the landscape as represented by the establishment of extensive field systems. Evidence for settlement also becomes much more frequent and the practice of building large funerary monuments ceases while flat burials become more common. In short the landscape appears to become less ritual and more domestic in its appearance. The EKA2 provides important regional evidence for all of these features, some of which had been thought to be absent from Thanet. A characteristic of the Late Bronze Age, particularly in south-east Britain and especially along the shores of the Thames estuary, is the deposition of large numbers of metal hoards. In this regard the evidence from the project is of national importance.

The dating of these periods is largely based on pottery and the current project is no exception. While there are some important associations of pottery and metalwork elsewhere, until recently they have often offered parallel chronologies. These chronologies are now being integrated and refined by radiocarbon dating. On Thanet the recent dating of the Late Bronze Age site at Cliffs End Farm, which is close to Zone 26, has allowed the pottery of 10th–9th centuries BC to be characterised and this material provides a pivot in the ceramic chronology. Here, the Middle Bronze Age is defined as beginning *c* 1600 BC and the Late Bronze Age as beginning *c* 1100 BC and ending *c* 700 BC. The definition of the earliest phases of the Iron Age is rather less secure.

Fields and droveways

Perhaps the most important result in improving our understanding of the development of the landscape in the Bronze Age was the discovery of an extensive coaxial field system on the south facing slopes of Cottington Hill, Sevenscore and the Cliffs End spur. Ditches belonging to field boundaries were found in Zones 6, 7–8, 10–11 and 26, as well as on the 2005 pipeline in broadly the same area (Egging Dinwiddy and Schuster 2009, 71). They were not found on the upper slope in Zone 17 or along the chalk ridge in Zones 18–25, which may suggest that this higher ground continued to be used for pasture. Middle Bronze Age fields were also absent on the Ebbsfleet peninsula in Zones 1–5. The peninsula would have been narrower than it is today, with the Wantsum still being a significant sea channel.

Most of the field boundaries on Cottington Hill were aligned east-west and (albeit less frequently) north-south. In Zone 8 a field boundary cut into the perimeter of an Early Bronze ring-ditch (Fig 2.8) indicating that funerary monuments were both respected and used as reference points when the field system was laid out. Although the dating from the field boundaries is generally slight, there is sufficient pottery to demonstrate that most of them are Middle Bronze Age and this is confirmed by a number of stratigraphic relationships. A group of similar boundary ditches found in Zone 6 have been dated to the Late Bronze Age. They may represent an extension of the field system to the south, or possibly the incorporation of Late Bronze Age pottery in earlier ditches.

The establishment of extensive field systems in certain areas of southern England in the Middle Bronze Age, including in northern Kent, is now well-established (Yates 2007; Champion 2007a, 298; 2007b, 101). However, a field system at Minster in Thanet, immediately to the west of the route, has recently been radiocarbon dated to the Early Bronze Age (Martin *et al*

2012) and one of the field systems at Thanet Earth dates to early in the Middle Bronze Age if not before (Rady 2010, 5–6). As the dating evidence for the field systems found in the current project is generally slight, the possibility should be allowed that some elements of it are Early rather than Middle Bronze Age.

There are gaps in some field boundaries and while these may be a result of truncation it is also possible that they were intentional and represent entrances to allow the movement of livestock, especially sheep (Pryor 1996). There were also a number of droveways represented by pairs of parallel ditches. These droveways controlled the movement of livestock; sometimes this was by creating routes through the field system, presumably to protect crops from being trampled, but in two cases the droveways were connected to a series of small compounds that probably served as animal pens. The droveways and compounds in Zones 4 and 7 were both Late Bronze Age in date. In Zone 4 it is possible that an area that was periodically inundated was enclosed and used as a waterhole.

This slight evidence hints that droveways may have been a Late Bronze Age development and with the possible exception of the ditches in Zone 6 there is no evidence that new field systems were laid out in the Late Bronze Age. As some field ditches of Middle Bronze Age date were cut by Late Bronze Age pits it is clear that at least some of these boundaries had fallen out of use by that time. It is uncertain if this represents a wide ranging change in the organisation of the landscape, or perhaps a greater emphasis on livestock in relation to arable.

A field system in Zones 7–8 was represented by east–west ditches 201129, 201102, 270060, 193095, 135086 and 165054 which extended up the slope for 200m (Figs 3.8 and 3.9). The northernmost of these boundaries (165054) may have been double ditched (201166) and functioned as a droveway. A short length of east-west aligned ditch (165054) that contained Middle–Late Bronze Age pottery cut into Early Bronze Age ring-ditch 273092, this relationship suggesting that some of the earlier funerary monuments were incorporated into the field system.

Part of the southernmost boundary of the system was also double ditched and represents a rectilinear droveway that turned south towards the series of compounds. Within the area enclosed a curving ditch (201096) formed the eastern side of a smaller compound that used one ditch (201094) of the north-south length of droveway (201094) as its western side. There were a few undated pits and short lengths of ditch within the compound but little to suggest that there was a settlement. Instead, the gaps in the inner ditches of the droveway and the curving compound seem to be entrances, again presumably for herding animals. The gaps in ditches 135086/201151/216058/201150 may also have been to allow the movement of animals. As these ditches were cut in two places by Late Bronze Age features it seems likely that the field system is Middle Bronze Age in origin. An east-west oriented ditch found to the east in the 2005 pipeline excavations contained Middle Bronze Age pottery and it seems likely to have been part of the same field system.

As well as rectilinear fields the system also contained some droveways and some of the gaps in field boundaries (Fig 3.9), if not due to differential preservation, may have been to allow the movement of stock through them. At the southern end of the field system in Zone 7 a compound associated with a droveway may have been used as an animal pen.

Further to the north in Zone 10 a short length of Bronze Age ditch (16808) aligned east-west seems likely to have been part of a field system, as may two isolated north-south lengths of ditch (190428 and 190410) in Zone 11. All three ditches contained only struck flint suggesting that undated lengths of ditch could also be Bronze Age in date.

An unusual D-shaped enclosure was found in Zone 14, represented by pairs of parallel gullies (Fig 3.15). Although there are superficial similarities to palisaded enclosures of Early Iron Age date, the Zone 14 enclosure was not a settlement. There are no contemporary features within it and no finds from the ditches. The dating is inferential; Iron Age pits cut an apparently associated field boundary (182142) to the west of the enclosure. The enclosure appears to have been attached to the junction of two, possibly four, droveways. Ditch 191154 is the western ditch of the southern droveway, 159240/182142 represents the single ditch of the western droveway (though 13170 seems likely to have originated as the western ditch), 159228/159238 represents the northern droveway, and 159235 represents the northern ditch of the eastern droveway. The enclosure lay to the south-east of the junction of these droveways, with the curving ditches forming the D-shaped enclosure 15922–3.

The northern pair of the ditches of the D-shaped enclosure, 159235 and 159237, do not continue to the eastern side of the enclosure, leaving a large gap. Roman and Anglo-Saxon activity obscures the southern part of the enclosure but there also appears to have been a gap in the southern ditch (159223). The absence of finds and the large gap in the northern side of the enclosure, and possibly the southern side too, suggest that the enclosure was for collecting livestock with gaps in the droveway/enclosure being entrances.

In Zone 19 two gullies ran north-south about 18m apart (Fig 3.16). They appeared to be cut by the Late Bronze Age settlement enclosure ditch 126230. The western gully (126231) contained Late Bronze Age pottery though this could be intrusive from activity within the enclosure. The eastern gully (126233) did not extend as a far north as 126231, but gully 126232 appeared to be a continuation of it, then turning at a right angle to the east. This feature, however, contained a single early medieval sherd and its phasing is uncertain, although it is possible that the parallel gullies represent a droveway. The other droveways found in the excavations are Late Bronze Age.

In Zone 26 two pits (213001 and 222001) that contained complete Middle Bronze Age jars lay within an undated ditched enclosure (201049/201047/201045)(Fig 3.14). The northern arm (201045) was cut by a pit containing Late Bronze Age pottery and the southern arm (201049) was cut by a ditch (201048) of

Iron Age date. The Iron Age ditch also cut another rectilinear ditched enclosure (201052) that lay to the south. This suggests that the ditches and other undated examples were Middle Bronze Age field boundaries. A group of ditches to the south-east may also have been part of field system, though only one of them (201062, see Fig 3.14) contained a small quantity of Middle–Late Bronze Age pottery.

Lastly, in Zones 4 and 5 a large (*c* 3m wide) flat bottomed SW–NE aligned ditch (147206/7) cut across the Late Bronze Age features (see Fig 3.22). The ditch, which is much larger than any of the other Late Bronze Age boundaries, was recut on the same alignment suggesting that it represented a substantial boundary of Late Bronze Age or Early Iron Age date. The course of this ditch to the north is not known. It cannot be correlated with any of the features found to the north-east during the 2005 pipeline excavations. While it is possible that the ditch continued in an arc before turning to run east-west across Zone 6, effectively encircling the base of Ebbsfleet Hill, there is no certain evidence for this. However, the southern edge of the Iron Age and Roman settlements in Zone 6 was defined by a very clear and long lasting boundary. In the latter stages this boundary was represented by ditch 170178, and although the only dating evidence is Roman it is possible that the ditch originated in the Late Bronze Age.

Settlements

In contrast to the extensive evidence for fields and droveways, the evidence for Later Bronze Age settlement was generally ephemeral, typically being inferred from domestic debris in pits or in ditches. Even so, it is clear that some settlements stood amongst the field systems, either as open, unenclosed settlements or within small compounds. Only a few postholes were discovered in these settlements and no houses or ancillary buildings were definitely recognised, although some possible four-post structures were identified in Zone 4. A single larger probable settlement enclosure was found in Zone 19 but only a small part of it lay within the route of the new road and no features within the enclosure were definitely identified.

Middle Bronze Age

An isolated pit (197101) and adjacent ditch fill in Zone 10 contained three ring-stamped bowls of Birchington type (Fig 3.5, 12–13) along with small quantity of other Middle Bronze Age pottery (Fig 3.5, 11) and some fired clay. Birchington type bowls are relatively rare finds on Thanet and here the associated finds suggest that there was settlement in the vicinity.

The extensive Iron Age activity in Zone 12 overlay some slight evidence for Bronze Age settlement. A curving gully (148044) of Middle Bronze Age date may be part of a settlement compound, but the only contemporary feature within the compound was a pit (214001). A tree-throw hole (202079) 75m to the east also contained Middle Bronze Age pottery and a further 60m to the east was shallow pit 214076.

Two pits in Zone 26 (222001 and 213001) both contained the bases of Middle Bronze Age pots. No cremated bone or pyre related material was found and the close fit of the pots into the pits suggests that they were dug to contain the vessels. The lower part of the jar in pit 222001, possibly a Barrel Urn (Vol 2, Fig 8.2, 9), contained the base of a second smaller thin-walled jar that had been placed within it. Complete pots set in pits are found occasionally in or near to Middle Bronze Age settlements, including several others on Thanet (Boden 2007, 28; Hutcheson and Andrews 2009, 203, 241, pl 4.2; Powell 2010, 336). While it may be tempting to view the features as cenotaphs (eg, Egging Dinwiddy and McKinley 2009), the absence of cremated bone and pyre debris is so regular an occurrence (eg, Barnes and Cleal 1995, 13–14, pl 5; Chadwick 2006, 18–20, fig 7, 10) as to suggest that the buried pots served a special purpose, either for processing or storage, or possibly as ritual deposits. Whatever interpretation is preferred, the pits in Zone 26 hint that settlement may lie nearby.

The two pits in Zone 26 lay within an undated ditched enclosure that was cut by a ditch (201048) of Iron Age date. The Iron Age ditch also cut another undated rectilinear ditched enclosure that lay to the south. It is possible that these undated ditches were Bronze Age field boundaries. A further group of poorly dated ditches to the south-east may also be part of a field system.

Late Bronze Age

Evidence for settlements is more common in the Late Bronze Age and it is found in all the landscape zones, from the Ebbsfleet peninsula (in Zones 2, 4 and 7) to Thorne Hill on the chalk ridge (Zone 19).

Zone 4

Zone 4 contained evidence for a Late Bronze Age settlement and cemetery (Fig 3.1). As much of this area had been heavily truncated the evidence is fragmentary but it is quite diverse. The settlement was first identified in 2004–5 when what was thought to be a Late Bronze Age midden was found. In 2010 this deposit (172262) was shown to comprise a series of alluvial deposits that indicate that this area in the north of Zone 4 was periodically flooded in the Late Bronze Age. A considerable portion of the associated pottery was burnt. While most of it was from plain wares, some was decorated. It can now be seen that the deposits lay in a shallow hollow within a Late Bronze Age ditched enclosure. The ditches on the eastern side were examined in 2004–5 and the ones on the west in 2010 (190285 and 312026).

Postholes and gullies that are probably of Bronze Age date had been found previously below the deposits. Although they stratigraphically overlay the alluvial deposits, it is possible that the three late Bronze Age metalwork hoards (Ebbsfleet IV–VI) found in 2004–5 were deliberately buried on the margins of this wet area. This indicates activity in the zone through much of the Bronze Age. In the recent excavations two further Late Bronze Age hoards were found, another small bronze

hoard (Hoard VII) (Fig 3.1) and, most unusually, a pair of gold bracelets (Hoard VIII) (Pl 3.9). These hoards were found to the north of the alluvial deposits (Fig 3.1).

There were also small ditched enclosures in this area. The small gap between them was effectively turned into a droveway by the addition of a north-south ditch (190283). Other lengths of Late Bronze Ages ditches were found to the north of this area (193169) with some of them also forming part of droveway (177269; 280110). These droveways suggest that the shallow hollow filled by the alluvial deposit could have served as a waterhole, and it is possible that some elements of the enclosures to the west in the Weatherlees Pond excavation are contemporary. The droveway in the northern part of Zone 4 was cut by a much larger ditch aligned SW–NE (147206/7) which continued into Zone 5 (see below).

Little evidence for buildings was found but there were groups of postholes to the west of the alluvial deposits (Fig 3.2). One group of eight postholes, 127193, formed a small rectangular structure and there was a small four-post structure, 254145, to the north-west of it. The postholes of the four-post structure contained Late Bronze Age pottery and charred grain. Between the two structures was a pit (254124) that contained a Late Bronze Age pot and part of a bronze ingot, and there were a few other Late Bronze Age pits and postholes further to the north. Pit 254140 may have been an evaporating hearth for salt as it contained a single fragment that may be from a briquetage vessel.

Although this evidence is slight it suggests the presence of a Late Bronze Age settlement surrounded by droveways, small compounds, and perhaps a waterhole. In addition to the two hoards, three objects were found as single finds; the tip of a socketed axe (ON 3500) and part of a Ewart Park sword blade (ON 3508) which were not in cut features, and the ingot fragment found in a pit (254124). A small, unidentifiable, fragment of bronze found to the south in Zone 3 (ON 103) could also be of Late Bronze Age date.

Approximately 50m south of the settlement in Zone 4 was a small Late Bronze Age cemetery (252229) which comprised 13 small shallow pits, only two of which have been categorised as graves (Fig 3.4). It is possible that the cemetery was placed close to a small (4m diameter) ring-ditch which was observed in 1993 (Hearne *et al* 1995, 250, fig 4). It is not certain, however, that the settlement and cemetery were contemporary. The bronze hoards are certainly later, dating to the 9th or 8th centuries BC, but the presence of a typical Ewart Park phase ingot fragment in pit 254124 cannot be used to infer a similar date for the occupation of the settlement. The large later ditch 147206/7 (see Fig 3.22) suggests that there was a reorganisation of land boundaries later in the period and the hoards and pit 254124 may be contemporary with this. It is also possible that the poorly dated features below the alluvial deposit 172262 belong to an earlier phase of Bronze Age settlement.

Zones 6 and 7

In the north of Zone 6 and the south of Zone 7 part of another series of Late Bronze Age enclosures and droveways was found (Fig 3.6). A Late Bronze Age tanged chisel (ON 3222, context 305067) (Fig 3.3) and part of a possible Late Bronze Age gold finger ingot (ON 987049, see Vol 2, Pl 2.4) were found in Zone 6 but they cannot be related to any settlement-related features. While the chisel might be a casual loss, this is unlikely to be the case for the gold (if it is of this date). In view of the number of hoards from the Ebbsfleet peninsula, it is possible that both the metal objects derive from one or more disturbed hoards.

In Zone 6 two east-west aligned features (190513/4 and 248162/248167–8) were found, both being relatively substantial (Fig 3.6). Despite being recut, ditch 190513/4 contained little domestic debris suggesting that it may have been a field boundary. About 40m to the north 248162/248167–8 was a hollow-way that ran parallel to the probable boundary ditch. Although the pottery from the hollow-way could not be dated more closely than Bronze Age, a bronze pin, either of Late Bronze Age or Early Iron Age date (ON 3869), was also found. The hollow-way was later recut by two parallel ditches 2m apart which appear to have defined a droveway.

To the north of this a SE–NW aligned ditch (170084) may have formed part of the southernmost element of a series of enclosures and droveways found in the southern part of Zone 7 (Fig 3.10). A few small features scattered across Zone 6 contained small quantities of pottery but a pit (126320) immediately to the south of the southernmost ditch (169001) of a series of compounds and droveways in Zone 7 contained a large quantity of Late Bronze Age or Early Iron Age pottery that may have been associated with the compounds.

There was no evidence for buildings within the compounds in the south of Zone 7; only a single posthole contained Late Bronze Age pottery. However, there were at least 10 pits of this date and there were also moderate quantities of pottery and a little flint, and animal bone in the outer ditches, which had been recut. These finds suggest that the pits and ditches were associated with a settlement even though its form is not clear.

Most of the pits lay in the south of the group of enclosures, within the area defined by ditch 201091 to the west, which may form a discontinuous sub-rectangular enclosure *c* 40m long and 20m wide. A narrow gap separated this enclosure from the adjacent northern one defined by ditches 201092 and 186154. There were few features in this enclosure or in the one to the north, defined at the north by ditch 186231, suggesting that their primary purpose was not for settlement.

The double ditches around the exterior of the series of compounds, and also in the interior, may be droveways, with the crossroad-like junction in the north of the complex possibly being used to herd animals into particular compounds. The compounds within the complex with few internal features may have been animal pens.

To the north of this complex was a scatter of five Late Bronze Age pits (210058, 243053, 282031, 215146 and 215148, Figs 3.8 and 3.9) and one, possibly two ovens (303046 and 303049 and 154113, 154117 and154119)

(Fig 3.9). These features lay at the southern end of the Middle Bronze Age field system, within the sub-circular enclosure defined by ditches 201094 and 201096. The pottery from two of the pits (215146 and 215148) was Late Bronze Age or Early Iron Age in date suggesting that activity, presumably settlement, was maintained, not necessarily continuously, over some time.

Zones 7–8

Another area of Late Bronze Age settlement within the Middle Bronze Age field system was found further to the north in Zone 7 and in Zone 8 (Fig 3.9). Much of the evidence seems likely to have been truncated by an Iron Age settlement but at least 10 postholes and six pits contained Late Bronze Age pottery. Struck and burnt flint and small quantities of animal bone were also found and one of the pits (159256) contained a deposit of charred naked barley which was firmly dated to the Late Bronze Age by two radiocarbon determinations of 1010–830 cal BC (2770±35 BP, SUERC-40741) and 910–790 cal BC (2680±35 BP, SUERC-40740). The finds clearly derive from occupation but the extensive Iron Age activity means that it is not possible to say whether the settlement was enclosed or not. An isolated unurned burial (179102) lay 30m to the north of the settlement.

What might be either a Late Bronze Age gold 'lock-ring' or an Iron Age 'ear ring' (ON 2711) from the surface of one of the Late Iron Age ditches to the south of this concentration of features is an unusual find. Bronze Age 'lock-rings' were mostly deposited in hoards and while it is possible that that was the case here, the squashed and folded condition of the ring (if this happened in the Bronze or Iron Age) suggests that it may have been destined for recycling. Iron Age gold objects other than torques are also rare so, whatever the date of the object, its loss or deposition is unusual.

Zone 10

An isolated pit 167010 which contained Late Bronze Age pottery cut a short length of ditch (167003) which could be of similar date, whilst a well, or perhaps more likely a waterhole (157006) was found 120m to the north (Fig 3.11). The latter feature contained a little Late Bronze Age or Early Iron Age pottery, animal bone, and mussel and oyster shells, but a later, possibly Anglo-Saxon date, cannot be excluded entirely.

Two bronze objects, both from the colluvium that sealed Zone 10, are likely to be of Late Bronze Age date. One is a fragment of what is most probably a socketed knife (ON 986102) (Fig 3.3) and the other is what appears to be a typical fragment of a Late Bronze Age ingot (ON 986134). Both types are commonly found in Ewart Park hoards and, in the absence for obvious evidence for Late Bronze Age settlement in Zone 10, it is possible that they derive from one or more disturbed hoards.

Zone 12

A series of Late Bronze Age ditches in the immediate vicinity of gully 148044 appeared to form a sub-rectangular enclosure with ditch 147066 forming the western boundary (Fig 3.12). A pit to the east (219031) contained Late Bronze Age pottery, and although it was adjacent to two cremation burials it did not contain any cremated bone or pyre-related material and so may have been a settlement-related feature. There were three unurned and unaccompanied cremation burials nearby (126001, 146016 and 214042).

Zones 19–23

The southern edge of what may have been a Late Bronze Age enclosed settlement was found in Zone 19, though most of the enclosure lay beyond the excavation area (Fig 3.16). Three separate lengths of east-west ditch were found, each up to 3m wide and 1.5m deep. The fills of the ditch suggest that there was an internal bank. The two longer eastern and western lengths of ditch, 126229 and 126230, were separated from the shorter length of ditch between them (190382) by causeways and this arrangement presumably represents an entrance. The eastern and western ditches turned to the north suggesting that the enclosure, which was 65m wide, may have been curvilinear, perhaps sub-oval in shape. The only possibly contemporary feature within the area of the enclosure that was exposed was a large pit-like feature (217087) which contained Late Bronze Age pottery. The enclosure ditches contained pottery, animal bone and shell which suggest domestic activity. Part of a human skull of an adult, possibly female, was found in the lower fills of the western length of ditch 126229 and may well represent a placed deposit.

A Late Bronze Age pin (ON 909) from Zone 23 (Fig 3.3) appears to be an isolated find.

The agricultural basis

Such ephemeral and low-density evidence for Bronze Age settlements is being recognised increasingly widely. As Champion has noted (2011, 210), while enclosed Middle Bronze Age settlements are found in Kent, and on Thanet they are known at South Dumpton Down and Westwood Cross, Broadstairs (Perkins 1995a, 469; Gollop 2005), most settlements in Kent and in the Lower Thames estuary more generally are unenclosed and are represented only by a few pits and postholes, often located in field systems (eg, Diack 2006). This represents a very different type of Middle Bronze Age settlement from that seen on the downs of Sussex or further to the west in Wessex.

This type of unenclosed settlement continues to be widespread in Kent in the Late Bronze Age and a local example is known at Monkton Court Farm (Perkins *et al* 1995) although this, like the settlement in Zone 4 and also Cliffs End Farm, yielded a large pottery assemblage. In the current project most of the unenclosed Late Bronze Age settlements continued to be found amongst fields and trackways. The only possible example of an enclosed settlement was found in Zone 19. Although only a small area of this enclosure lay within the road corridor the finds from the ditch appear to derive from domestic activity. Comparable enclosures include an oval-shaped Late Bronze Age enclosure

nearby at Ramsgate Harbour Approach Road (Dyson *et al* 2000, 470) and part of what may be another has been found at Ellington School, Ramsgate (Boden 2007, 28) with a smaller one at Thanet Earth (Rady 2010, 6). A comparable enclosure is also known at Highstead (Enclosure B70) (Bennett *et al* 2007, 16–25, fig 16; Champion 2007b, 105, fig 4.25).

On Thanet, fields can now be shown to have appeared in the Middle or even Early Bronze Age. Until recently such field systems had not been found in Thanet (Champion 2007a, 298; 2007b, 101), but field systems have now also been identified north of Manston airport (Moody 2008, 99, fi. 55), at Manston Road, Ramsgate (Hutcheson and Andrews 2009, 241), at Westwood Cross, Broadstairs (Poole and Webley 2008, 80, fig 2), at Minster in Thanet (Martin *et al* 2012) and at Thanet Earth (Rady 2010, 5–6). However, no fields were identified in the transect provided by the A253 between Monkton and Mount Pleasant along the chalk ridge (Bennett *et al* 2008).

In the current scheme there was little evidence for Bronze Age fields on the low lying land of the Ebbsfleet peninsula or on the higher ground of the chalk ridge. If the origins of this sort of extensive Bronze Age field system did indeed lie in sheep rearing (Pryor 1996), it would appear that in this part of Thanet at least, this was concentrated on the south-facing slopes of Sevenscore.

Few new fields were created in the Late Bronze Age. As Late Bronze Age systems have been noted nearby at Chalk Hill, Ramsgate (Dyson *et al* 2000) and also at Westhawk Farm near Ashford (Booth *et al* 2008), the evidence currently available suggest that the decisions to create new field systems were very local and it is possible that these systems were short-lived and shifting. In the current project, trackways became more common in the Late Bronze Age, and an apparently isolated well found in Zone 10 may have been a waterhole for cattle. At Manston airport a trackway is later than the field system, and the same may be the case at Westwood Cross. At Manston Road, Ramsgate, ditches that were possibly part of droveway system are Late Bronze Age (Hutcheson and Andrews 2009, 204–6, fig 4.3) and the droveways and compounds at Haine Road, also in Ramsgate, may be of the same date (Powell 2010, 334–6, fig 1). At Thanet Earth droveways and small field systems also appear in the Late Bronze Age (Weekes 2010, 358, fig 1). This evidence might suggest an increasing emphasis on livestock but the ephemeral nature of most of the Bronze Age settlements examined means that only a relatively small amount of evidence for the contemporary environment and how it was farmed is available.

Charred plant remains from Middle or Late Bronze Age field boundary ditch 201163 in Zone 26 contained emmer wheat and hulled barley. The presence of emmer chaff suggests that the sample derives from crop processing but there are no obvious indications of a contemporary settlement in the vicinity. Hazelnut shell, elder seeds and sloe stones suggest the gathering of wild foods. The seeds from the sample were indicative of damp habitats. This could indicate that low-lying ground close to Pegwell Bay immediately to the east was being farmed. Similar evidence was found in the Middle Bronze Age settlement at Westwood Cross, Broadstairs (Allison 2005, 59) and closer to EKA2, in a Bronze Age ditch at Stonelees Golf Centre, Ebbsfleet Lane (Allison 2011, 75).

The assemblages of charred plant remains from samples of Late Bronze Age date were much richer (Hunter below). Emmer and spelt wheat were the most common crops identified amongst the chaff, and some possible emmer wheat grains were present. A similar pattern was seen in the smaller samples from Manston Road (Hutcheson and Andrews 2009, 233–4) and Haine Road (Powell 2010, 336), both in Ramsgate. An exceptionally well-preserved deposit of naked barley grains was found in pit 159256 in Zone 7 and radiocarbon dated to the 9th or 8th century BC. Hulled barley and emmer type grains were also present and as no naked barley chaff was present the cereals may have been processed. It is suggested (Vol 2, Hunter, Chap 17) that because the barley is so well-preserved it may represent a votive deposit, though the degree of preservation may simply reflect how thoroughly charred the material was, which led to its rapid disposal.

Emmer was the most common type of wheat from the other samples of Late Bronze Age date but some spelt, which became increasingly important in the Iron Age, was found in the enclosure ditch of the possible settlement in Zone 19. Broad beans are first identified in the Late Bronze Age and as legumes do not need to be dried as part of processing the crops, which is how most cereal remains come to be charred, they are likely to be underrepresented in the charred remains. However, their regular association with cereals may suggest that they were grown amongst them, either to increase productivity or insure against poor harvests.

The weed seeds found with the cereals are, as might be expected, seeds typical of disturbed ground including scentless mayweed and fat hen which are common weeds of cultivation in later prehistoric contexts. The earliest grains of free threshing wheat were found in a Late Bronze Age/Early Iron Age posthole 179130 in Zone 7, along with glume type wheat grains and evidence for spelt, oat and vetch.

The charcoals from the Late Bronze Age cremation-related deposits in Zone 4 were mainly of mature oak. As oak was the preferred wood for use in pyres in British prehistory this provides little information about what types of woodlands were present in the Bronze Age. The other woods such as blackthorn, buckthorn and ash may have been used as kindling, but as they were found much less frequently it is only possible to note their presence. Because of this limited evidence the earlier work adjacent to the Ebbsfleet peninsula at Weatherlees Hill remains important in demonstrating that there were still significant oak and hazel woodlands in the area in later prehistory. However, the date suggested for their decline, later Iron Age and Roman (Hearne *et al* 1995, 312), is not well established and it is possible that this process began in the Bronze Age.

There was relatively little animal bone from features of Bronze Age date and the few larger groups of material came from Late Bronze Age/Early Iron Age features in Zones 4, 6 and 7 on the Ebbsfleet peninsula. Although cattle might be expected to dominate the assemblages from the low-lying peninsula, they are also the most important species in most other zones, followed by sheep/goat. The cattle will have been used for dairy products, as beasts of traction, and for beef. Of other species pig, horse, domestic fowl and mallard-sized duck are all represented and some of the sheep are from older animals suggesting that they were kept for milk and wool, and eventually meat. There is only limited evidence on the bones for butchery and the occasional red deer bone is likely to indicate hunting. Shed antler was also collected, presumably for use in making objects.

There is very little evidence for the use of marine resources so it is notable that a layer of mussel shells was found in the eastern terminal of Middle Bronze Age gully 148044 in Zone 12, possibly part of a settlement compound. A few oyster and whelk shells were also found in the Late Bronze Age enclosure ditch Zone 19, but the rarity of these finds serves only to emphasise how little use was made of seafood (Nicholson below). A similar rarity is seen elsewhere in Kent in the Bronze Age (eg, Allison 2005), though large quantities of mussels were recorded from the ditches of the Middle Bronze Age enclosed settlement at Westwood Cross, Broadstairs (Gollop 2005, 18).

Burials

Middle Bronze Age

Large barrows ceased to be built at the end of the Early Bronze Age and urned cremation burial often, though by no means always, in flat cemeteries became more common in the Middle Bronze Age. In the current scheme two isolated Middle Bronze Age cremation burials were found, one in Zone 6, the other in Zone 11. The neonate buried in grave 170073 in Zone 6 was placed in or beneath an inverted bucket-shaped jar (Fig 3.5, 10). Middle Bronze Age sherds from an adjacent Early–Middle Iron Age ditch (249097) could be from another urned burial that was destroyed when the ditch was dug. Grave 153017 in Zone 11 was also found beneath an inverted Bucket Urn (Leivers, Vol 2, Fig 8.1, 8). Neither grave was radiocarbon dated as the jars were chronologically diagnostic and the practice of placing burials either as unurned burials that had a pot placed over them upside down or in pots that had an organic cover placed over them before being inverted is well known in the Middle Bronze Age.

An unurned cremation burial in a small shallow grave was found in Zone 14 (166051) and was radiocarbon dated to 1420–1260 cal BC (3060±30 BP, SUERC-40279). This burial lay within the area of the later D-shaped enclosure. A grave containing a heavily truncated urned cremation burial (220024) lay to the west of the D-shaped enclosure in Zone 14. As the burial was urned it is most likely to date to the Middle Bronze Age.

In the east of Zone 21 an isolated upright urned cremation burial (grave 125220) was located 10m to the south of a row of inhumation burials that may be of Late Bronze Age date. The urn was a bi-partite jar with horseshoe handles below the rim and the cremation burial was radiocarbon dated to the Middle Bronze Age 1640–1460 cal BC (3280±30 BP, SUERC-40280; see Chap 2, Table 2.4).

In Zone 13 three Middle Bronze Age inhumations were found in or between the ring-ditches. Two burials lay between the concentric ditches of Barrow 1; grave 203001 was radiocarbon dated to 1610–1430 cal BC (3230±30 BP, SUERC-40298) and grave 221014 was dated to 1530–1410 cal BC (3210±30 BP, SUERC-40300) (Fig 3.13). The third inhumation (200090) came from the ditch of Barrow 2 and was dated to 1420–1220 cal BC (3055±30 BP, SUERC-40297) (Fig 3.13). A small quantity of undated cremated bone from the upper fill of ring-ditch 1 could also be Middle or Late Bronze Age.

A small Middle Bronze Age barrow (232168) was found in Zone 21 (Figs 3.17–8). The ring-ditch was much smaller than the adjacent Early Bronze Age examples with the narrow and shallow ditch being only 6m in diameter, one quarter of the size of the earlier ring-ditches. The central burial was the unaccompanied inhumation of a *c* 40–55 year old man which was radiocarbon dated to 1410–1200 cal BC (3040±35 BP, SUERC-40714). In Zone 23 a grave (290481) cut into the fill of the north-east circuit of ring-ditch 193123 contained an unaccompanied inhumation which was radiocarbon dated to 1610–1410 cal BC (3210± 35 BP, SUERC-40723).

Late Bronze Age

Approximately 50m south of the settlement in Zone 4 was a small Late Bronze Age cemetery (252229) (Figs 3.1 and 3.4). This comprised a series of 13 small shallow pits. Eleven them contained cremated bone and pyre debris but only two (252115 and 252223) have been categorised as cremation burials. The cremated bone from both returned Late Bronze Age dates (252115: 1130–920 cal BC; 2855±30 BP, SUERC-40267; 252223: 1260–1010 cal BC; 2925±30 BP, SUERC-40268) and grave 252115 also contained Late Bronze Age pottery. In 1993 a small ring-ditch was identified 10m to the south-east. It was covered over by a new access road before it could be fully excavated, but not before a sondage had been excavated and this found a ground flint Neolithic axe on the base of the ditch (Hearne *et al* 1995, 250, 281, fig 4; 14). This hints that the small Late Bronze Age cemetery 252229 in Zone 4 could have been sited in relation to an earlier funerary monument of Late Neolithic or Bronze Age date.

In Zone 7 an isolated unurned burial (179102) 30m to the north of the settlement was radiocarbon dated to 1260–1010 cal BC (2925±30 BP, SUERC-40269). Although this is earlier than either of the two dates from pit 159256 in the settlement to the south, it still seems likely that the burial is contemporary with the settlement. There were also three unurned and unaccompa-

nied cremation burials in Zone 12 (126001, 146016 and 214042), two of which were radiocarbon dated to the Late Bronze Age; 126001 (1020–840 cal BC; 2790±30 BP, SUERC-40276) and 146016 (1010–840 cal BC, 2785±30 BP, SUERC-40277).

In Zone 21 an apparently isolated linear cemetery of six unaccompanied inhumations was found (Figs 2.13 and 3.19–20). The row of burials was oriented SW–NE and it continued northwards beyond the excavation area. All the burials were crouched or flexed and were of adult males buried facing either south-east or north-west. One of the burials was dated to the Late Bronze Age (grave 275007, 1060–840 cal BC; 2810±35 BP, SUERC-40719). It is uncertain whether the other five burials in the row are of the same date, though this seems likely, and what might be the remains of an empty grave (125232, Fig 3.17) was found 40m to the south-west on the same alignment. This undated feature, which was very badly disturbed, contained a single human tooth which might suggest that it was a further grave. The unaccompanied flexed inhumation of a possible female facing west was found immediately to the north-west of the row (220051) and was dated to the Early Bronze Age (2130–1890 cal BC: SUERC-40718). An isolated urned cremation burial (grave 125220) some 10m to the south was radiocarbon dated to the Middle Bronze Age, 1640–1460 cal BC (3280± 30 BP, SUERC-40280).

This group of burials is unusual in several regards. The burials are apparently isolated from contemporary activity, lying to the east of the Late Bronze Age activity in Zone 24 and some distance west of the Late Bronze Age enclosure in Zone 19. Burials from three different stages of the Bronze Age were not found close to one another elsewhere on the scheme. The linear arrangement of six Bronze Age burials is also unusual. However, the significance of these observations is not clear.

In Zone 24 an unaccompanied inhumation burial in grave 198245 was radiocarbon dated to 1120–910 cal BC (2840±35 BP, SUERC-40724) (Fig 3.20). It was adjacent to a small Late Bronze Age quarry that been partly examined in earlier excavations and where at least one undated burial was found.

Lastly, a single fragment of a human skull was found in a probable Late Bronze Age settlement context, in the ditch of the enclosure in Zone 19 (Fig 3.16). This recalls the placing of a skull (or part of a skull) at the terminal of an Early Iron Age enclosure ditch at Little Stock Farm on High Speed 1 (Champion 2011, 19, 236, fig 4.22).

An interesting aspect of the later Bronze Age burials is that they show that inhumation and cremation burial were practised contemporaneously (see Table 3.3; see Fig 3.69). At least four Middle Bronze Age cremation burials were found (in Zones 6, 11, 14 and 21) and there were five unaccompanied Middle Bronze Age inhumations, three in Zone 13 and two in Zone 21, one within a small barrow. As the burial urns containing the cremation burials are of Middle Bronze Age date, the burials themselves were not radiocarbon dated, so it is not possible to assess precisely the contemporaneity of cremation and inhumation here, but it may be said that the dates of the inhumation burials compare well with dates from cremation burials from other sites, falling in and around the 15th century cal BC. Such burials are well known and local examples include Margate (Perkins 1996) and Ellington School, Ramsgate (Boden 2007, 28). Middle Bronze Age inhumations are less frequent than cremation burials, but in this case there is clear continuity in the practise of inhumation from the Early to Middle Bronze Age. In Zones 13 and 21 Middle Bronze Age burials were made in the partly infilled ditches of Early Bronze Age ring-ditches. At Thanet Earth two Middle Bronze Age inhumation burials were cut into the ditches of a field system (Rady 2010, 5–6).

The discovery of a small Middle Bronze Age barrow (232168) in Zone 21 is a slightly less common find (Fig 3.17). While less common than Early Bronze Age examples, small ring-ditches are still well known in Middle Bronze Age contexts. Local examples are known from Manston, where four were found (Bennett *et al* 2008, 35–46), and at West Cliff, Ramsgate (Moody *et al* 2010). The West Cliff example was 5m in diameter and the uncertainly dated example recorded within Zone 4 in 1993 was 4m in diameter. An undated ring-ditch at Thanet Earth (barrow 8) was 7m in diameter (Rady 2009, 18). Small Bronze Age ring-ditches are particularly common on the other side of the Thames Estuary in Essex, where they usually surround cremation burials. Although the ring-ditches occur in tightly packed groups in cemeteries in the Ardleigh group in north-east Essex (eg, Germany 2007), the examples in the south of the county are fewer and more widely scattered (Brown 1995; 1996).

Late Bronze Age cremation burials were found in Zone 4 (13 features contained cremated human bone and/or pyre debris but only two have been categorised as burials; Fig 3.4), Zone 7 (one), Zone 12 (two, probably three), and Zone 14 (one, possibly two). Late Bronze Age inhumations were found in Zone 21, where there were six burials in a row, one of which was radiocarbon dated, and Zone 24 (one). In this case the dates make it clear that the inhumation and cremation burials are contemporary. Although there appears to be a gap between the dates of the Middle and Late Bronze Age inhumations there are too few dates for this observation to carry much weight.

Other than cinerary urns, grave goods were absent from all of the later Bronze Age burials. However, radiocarbon dating has shown that unurned and unaccompanied Late Bronze Age cremation burials are much more common than previously thought and the evidence here adds to this pattern. What is more unusual is the discovery of what may be a linear Late Bronze Age inhumation cemetery in Zone 21 (*cf* Champion 2007a, 111). Although only a single burial was dated it seems likely that all the burials in such a clear alignment would have been of the same date. A Late Bronze Age inhumation was also found in Zone 24, with probably another in the adjacent, earlier excavations at Tothill Street (Bailey 2010, 70). In addition, a single fragment of cranium was found in a probable settlement context in Zone 19 recalling the finds from Minnis Bay (Worsfold

1943). The Late Bronze Age articulated and disarticulated burials from Cliffs End, adjacent to Zone 26, show a hitherto unrecognised range of secondary burial rites and a significant proportion of the people buried there were incomers (McKinley *et al* 2013).

This evidence suggests that a variety of mortuary rites were being practised at the same time. However, there may be similarities between them. In demonstrating the regular presence of disarticulated human remains in Late Bronze Age settlements Brück (1995) commented on the importance of fragmentation, a theme which is echoed in the way that some aspects of material culture were treated. This point is also relevant to the way in which cremation burials are considered. Although 13 Late Bronze Age 'graves' were identified in the cemetery in Zone 4, only two of them contained sufficient bone for them to be considered as 'burials.' These categories, while heuristic, are modern not ancient and there may be similarities in the way in which the body was buried irrespective of how it was treated in earlier stages of secondary burial rites. Another possible similarity concerns where the burials were placed. The cremation burials are found close to settlements but disarticulated remains are often found in the enclosure ditches that bound them.

Material culture

There were few finds from the Bronze Age settlements and fields. Most were of flint or burnt flint, with only a small quantity of pottery. No querns or stone rubbers were found. Nor were there any objects of antler or bone (part of a bone object from the upper fill of Early Bronze Age ring-ditch 134096 (Vol 2, Fig 7.3, 20) is likely to be much later in date). Apart from flints, almost the only tool found was a grooved piece of chalk, superficially similar to Neolithic and Bronze Age so-called arrowshaft smoothers or straighteners, from Middle Bronze Age pit 211043 in Zone 13. Its purpose is unknown but it was presumably a tool of some sort (see Shaffrey, below).

The technology of the flint tools is typical of metal age working (eg, Ford *et al* 1984; Young and Humphrey 1999). Hard-hammer percussion was used and here beach cobbles rather than the fine Bullhead flint were used. The tools, typically scrapers, heavy-duty piercers and flakes with varying degrees of retouch, are much coarser than the flint work of earlier periods. The distribution of this material was restricted to the southern part of the scheme and while found in later Bronze Age features, no particular concentrations were noted.

Burnt flint is a characteristic find on later prehistoric settlements in southern England and may well have been associated with cooking, the stones being heated and then placed in water. Single Middle Bronze Age pits in Zones 10 and 12 (197101 and 214001) contained fired clay, probably from hearths or ovens. Much greater quantities of fired clay were found in Late Bronze Age contexts. Most of this was found in ditches but these were the most common feature type found in this period so the association is not particularly significant. Most pieces were fragments from ovens and hearths but there was some oven or hearth furniture including oblong pedestals, and some fragments of fired clay had impressions of wattles suggesting that they were from structures of some sort.

Salt working first appears in the Late Bronze Age, as is often the case in south-east England (Lane and Morris 2001, 392, table 98). As well as the material from pit 254140 in Zone 4, which may have been an evaporating hearth, small fragments of salt working hearths came from Zones 6 and 19 and a pinch prop used to support vessels was found in Zone 7.

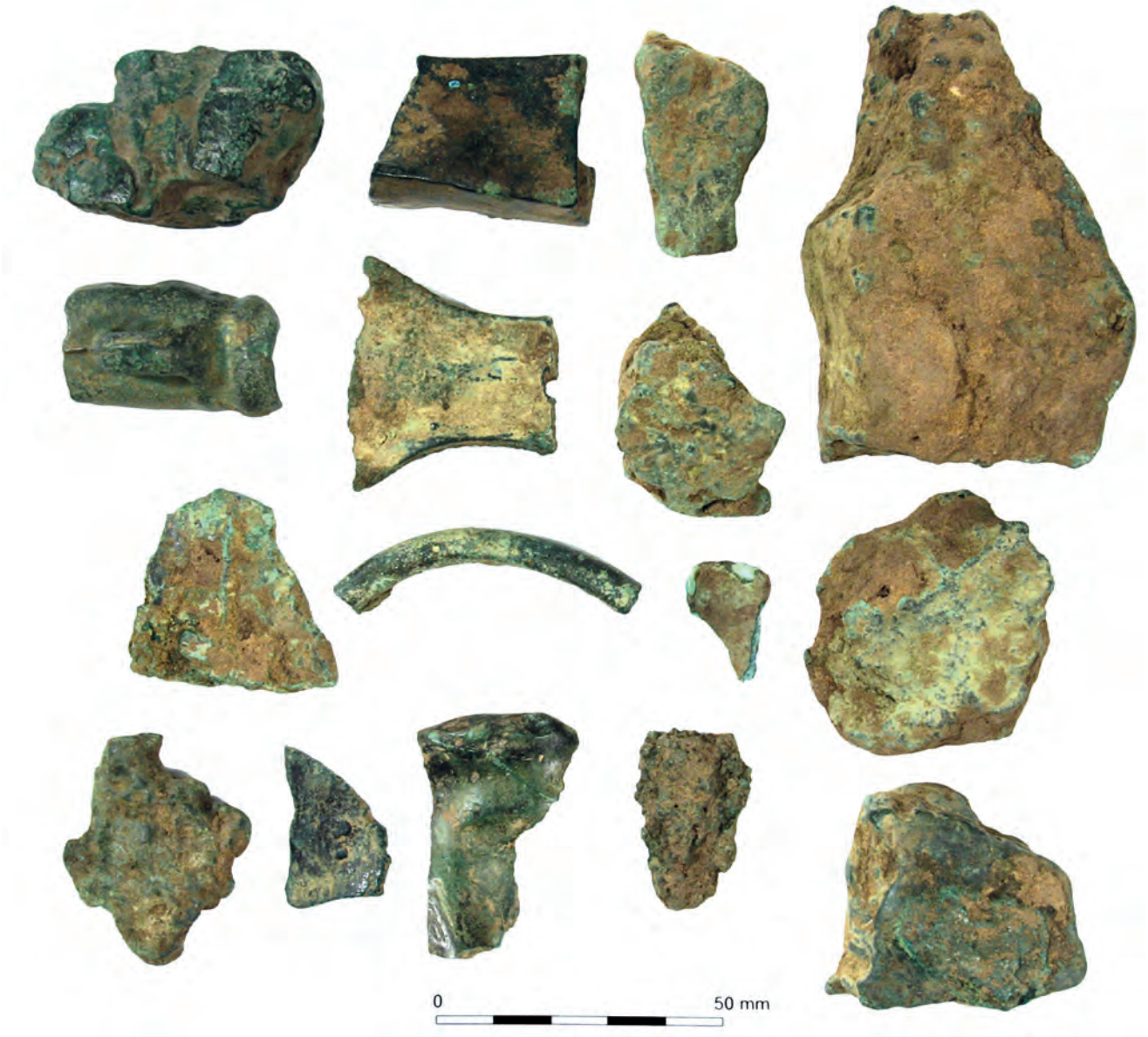
Most of the small quantity of Middle Bronze Age pottery came from Bucket or Barrel Urns of Deverel-Rimbury type used as cinerary urns or as buried storage containers (Fig 3.5). These vessels were all flint-tempered and though badly truncated it could be seen that some were bi-conical. Most of the other material is represented by small groups of undiagnostic sherds with occasional cordons and finger pressed decoration. The condition of the material means that it has not been possible to distinguish vessels attributable to a Middle/Late Bronze Age transition phase, as was possible for some of the High Speed 1 sites (Leivers 2011). Two small vessels from Zone 6, residual in an Iron Age context (249097), are more unusual. One is plain but the other has pinched decoration of the sort often found on Globular Urns (Fig 3.5, 14–15). From the same context were two vessels tempered with igneous rock, one containing what could be gabbro. The Cornish origin of these two vessels is confirmed by sherds found in another Iron Age context (170170) further to the north that are from a large jar of Trevisker type (Fig 3.5, 16).

The Middle Bronze Age pottery is generally typical of Ellison's Lower Thames Valley group (1981) which is found on both sides of the Thames. One of the distinguishing traits of this group is the rarity of fine globular forms and the presence instead of fine ring-stamped globular bowls. Several ring-stamped bowls are already known from Thanet and there are some examples from Essex (Wymer and Brown 1995). Possible connections across the Thames Estuary with south Essex are also suggested by the Middle Bronze Age inhumation in the small ring-ditch in Zone 21. In contrast, the origins of the Trevisker jar are in the south-west. It is the second such vessel from Cornwall to be discovered on Thanet, the first having been found just to the west at Monkton (Gibson *et al* 1997). That vessel is radiocarbon dated to 1600–1320 cal BC (3175±50 BP, OxA-6141). There is also another possible Trevisker vessel from Hayes in Kent (Gibson *et al* 1997). In France vessels have been found at Mondeville, Calvados and Hardelot in Pas-de-Calais, and there is Trevisker related pottery from l'île Tatihou just off the Cotentin pensinsula in Normandy (Gibson *et al* 1997; Bennett *et al* 2008, 54–61; Needham 2009, fig 2.7a). It is tempting to see these vessels as being associated with a trade in tin, particularly given the significant quantities of scrap metal later found in Thanet in the Late Bronze Age (see below), and transported in vessels such as the Dover boat, in which a piece of Kimmeridge shale was found (Bown *et al*

2004), and that from Langdon Bay (Muckelroy 1981).

The only other obvious sign of foreign material in the Middle Bronze Age is a small amber bead from a pit (214001) in the settlement in Zone 12 (see Vol 2, Fig 7.1,1). The bead is an unusual find as most examples of this type, Beck and Shennan's type 1A, are, like most other finds of prehistoric amber from Britain, Early Bronze Age in date with relatively few later examples (Beck and Shennan 1991, 53, table 4.1). As sherds of Collared Urn were found redeposited in Iron Age ditch 190130 in Zone 12, it is possible that the bead from Zone 12 is residual. However, most of the examples of the bead type are from Early Bronze Age burials in Wessex, and they may not be representative of the period of manufacture of such a simple type which cannot be considered to be characteristic of any particular period (*ibid.*, 77, fig 6.1).

The Late Bronze Age pottery is typical of Post-Deverel-Rimbury Plain Wares, dominated by simple high-shouldered short-necked jars and round shouldered bowls. Occasionally small cups are found. Decoration is rare, restricted to occasional applied finger impressed cordons and tooled horizontal lines. The surface of some vessels is rusticated. The largest groups came from the settlements in Zones 4 and 7 with a much smaller assemblage from the one in Zone 12. The presence of soot on the outside of some vessels from Zone 4 indicates that they were used for cooking, while some vessels from both Zones 4 and 7 had been burnt, though this may not have happened during use. Post-Deverel-Rimbury Plain Wares are now well known from Kent and in Thanet they are recorded from nearby Northdown, Margate (Smith 1987), Monkton Court Farm (Perkins *et al* 1995) and from Cliffs End Farm (McKinley *et al* forthcoming). As noted previously, the extensive radiocarbon dating programme at Cliffs End Farm indicates that the Plain Wares were in use in the 10th and 9th centuries BC there, though the extent to which these wares continued in use alongside the Earliest Iron Age wares on other sites in as yet unclear.



Pl 3.8 Late Bronze Age hoard material, selection of copper alloy ingot fragments and broken objects (Zone 4)

Late Bronze Age metalwork

Set against this apparently unassuming background, the number of Late Bronze Age metal objects is striking. Hoards of metalwork are one of the defining characteristics of the Late Bronze Age in Kent and several are known from Thanet. There is, however, a remarkable concentration of them on the Ebbsfleet peninsula and two small Late Bronze Age bronze hoards were found in Zone 4, one of gold and one of bronze, bringing to at least seven and possibly eight the number of Late Bronze Age hoards known from the Ebbsfleet peninsula. Not only is this a remarkable concentration of hoards, it is also very unusual in that most of the hoards have been found in archaeological excavation and this merits detailed consideration. All of the hoards belong to the Ewart Park metalworking stage of the Bronze Age (*c* 1020–800 BC), which is the last stage before iron was introduced in Britain. Hoards of this date typically comprise deliberately broken objects and ingots and because of this they are traditionally known as metalworker's or 'founders hoards.'

A small number of radiocarbon dates suggest that the 'mature' Ewart Park assemblage, to which the Ebbsfleet peninsula hoards belong, post-dates 920 BC (Needham *et al* 1997, 93–8; Needham 2007, 41). However, as an increasing number of the later Gündlingen type swords and other objects of Hallstatt C1a date (ie, Early Iron Age) are being recognised in Carp's Tongue hoards in France (Gerloff 2004) and in Britain, Brandherm and Burgess have suggested that most Carp's Tongue hoards were deposited in a very short period at the beginning of the Iron Age in the Llyn Fawr phase (800–600 BC), perhaps between 800–750 BC (Brandherm and Burgess 2008, 151–3). This would be contemporary with the small groups of Earliest Iron Age pottery which are best represented in from Zones 4 and 7 and would suggest that the Late Bronze Age settlements continued to be occupied.

Hundreds of Ewart Park phase hoards are known from Britain and very many of them have been found in south-east England. In this region the hoards often include fragments of objects that were made in continental Europe, including the Nantes-type sword whose tip has been suggested to recall a carp fish. This shape has lent its name to the hoards, the 'Carp's Tongue' hoards or horizon, in which the swords are found, both in northern France and Britain and occasionally beyond this region (Brandherm and Burgess 2008, 143–6, fig 4–5). In Britain the name 'Carp's Tongue' is routinely given to hoards of scrap metal of Ewart Park date, irrespective of whether they actually include fragments of swords, scabbards and baldrics (sword belts) and other objects such as winged axes that were made in France. Instead the core elements of the hoards are complete and fragmentary socketed axes and ingots (Pl 3.8).

Despite the hundreds of 'Carp's Tongue' hoards known (almost 400 in 2012), only a handful has been found in archaeological excavations. The number from the Ebbsfleet peninsula provides an as yet unparalleled opportunity to examine how and where such hoards were deposited. The latest bronze hoard found in 2010,

Pl 3.9 Late Bronze Age penannular gold bracelets; one cleaned, the other as found (Zone 4; ONs 880 and 881)

Hoard VII, consists of 17 bronze items and was found at the base of the subsoil at the north of Zone 4 (Figs 3.1 and 3.3; Pl 3.8). Two other items were discovered not far away, also in the subsoil. The tip of a socketed axe (ON 3500) was found 10m to the south-west of the hoard and part of a sword blade (ON 3508) was found 25m to the south-west. The second hoard found in 2010, Hoard VIII, comprises two gold bracelets and was also from the subsoil (Pl 3.9).

In 2004–5, the two hoards and the 'scatter' that may represent a further, but dispersed, hoard were found in what was then thought to have been the remains of a Late Bronze Age midden (Andrews *et al* 2009, 76–7). The 2010 excavations have shown that this layer is more probably an alluvial deposit (172262) in a slightly lower-lying area that was periodically inundated or flooded (Pl 3.1). This deposit is very close to the Late Bronze Age settlement in Zone 4 which is represented by a few rectangular structures, pits, ditches and gullies and quantities of domestic debris (Fig 3.1). As the hoards overlay the domestic debris in layer 172262 it seems likely that settlement, at least in the immediate vicinity of them, had ceased when they were deposited.

Hoard VII is a typical small 'Carp's Tongue' hoard, containing broken objects, principally swords and socketed axes, and fragments of ingot which represent scrap metal. Hoard VIII is rare in that it comprises gold bracelets which are much less common finds, but again it is typical of hoards of gold ornaments. In addition to the two hoards and the single fragments from an axe and a sword to the south-west of Hoard VII, a small fragment of a bronze ingot was found in pit 254124 towards the south of Zone 4, 100m away but closer to hoards IV and V and scatter/Hoard VI to the east.

The Ebbsfleet Hoards

The latest hoards need to be seen in the context of the previous hoards and their locations in the landscape (Fig 3.21). The details of these finds have been reviewed successively (Lawson 1995; Andrews *et al* 2009) so only the salient points need be summarised here (Table 3.1).

Table 3.1 Types of object in the Ebbsfleet Peninsula Late Bronze Age Hoards

*Category**	*Hoard*	*I*	*II*	*III*	*IV*	*V*	*Scatter VI*	*VII*	*Scatter Z4*	*VIII*
1	Socketed Axe	x	2		3–4	5–6	x	x	x	
2	Winged Axe							x		
3	Palstaves									
4	Small Tools	x		x		x		?		
5	Weaponry	x		x	x	x		x	x	
6	Weapon Fittings	x?								
7	Ornament		x					x		x
8	Decorative Fittings		x		x					
9	Other Fittings									
10	Cauldrons									
11	Scrap Metal				x					
12	Metalworking							x		
13	Ingot Metal	x		x		x	x	x		
	Number of Items	181	46	5	7	18	8	17	2	2
	Weight (g)	**	?	808	549	2079	1968	1272	106	60

*Categories after Turner (2010); ** Recorded as about 60 lb (27kg)

Fig 3.21 Distribution of Late Bronze Age hoards and probable former shoreline in: A: the Ebbsfleet Peninsula (Hoards I–VIII); B: Thanet and along the Wantsum Channel

Ebbsfleet I
Details of the context and exact location of the Ebbsfleet I hoard which was found at Ebbsfleet Farm in 1893 are not known (Perkins 199b1, 473). Payne described it as comprising 181 pieces which weighed about 60 lb. and included '*palstaves, socketed celts* [axes], *spearheads, portions of swords and celts, belt fasteners* [chape fittings?], *portion of a dagger, a knife and a quantity of ingots of copper*' (Payne 1895; Clinch 1908, 322–3). This hoard is the largest one yet discovered on the Ebbsfleet peninsula (Colquhoun and Burgess 1988, 109, no. 683; Brandherm and Burgess 2008, 156, no. 169).

Ebbsfleet II
This hoard is, in local terms, some distance from the recently discovered hoards, *c* 450m to the north-east and was called the Cottington Hill hoard by Perkins (1991b, 260, no. 6). It comprised two axes and a possible socketed knife and was found by a metal detector user in 1991 at a depth of 0.35m in the sandy subsoil. One of the axes contained 42 small bronze 'buttons' (Andrews *et al* 2009, 80). While it is possible that the objects were disturbed by modern drainage pipes that were excavated to a depth of 1m (Perkins 1991b, 260, no. 6; 1992, 303–4, fig 4), the context in which they were found is similar to that of the hoards discovered subsequently on the peninsula (Brandherm and Burgess 2008, 156, no. 169).

Ebbsfleet III
The five items of this hoard were found in a mixture of reworked natural sand at a depth of 0.8m in an area of $1m^2$. A cut feature such as a pit was not seen. At the time of discovery it was considered that the possibility that it was part of the Ebbsfleet I hoard could not be discounted, but the number of hoards that have been found subsequently suggest that it was a separate, small hoard (Lawson 1995).

Ebbsfleet IV
This hoard was found during the mechanical excavation of an evaluation trench in 2004. There was no evidence for a cut feature and the objects were in a thin layer or lens of dark soil towards the base of the subsoil. This layer (617 and 3768) was thought to be part of a midden (Andrews *et al* 2009; Jones 2009a–b; Brandherm and Burgess 2008, 162, no. 458).

Ebbsfleet V
This hoard was also found during the same evaluation in 2004. The hoard was not in a cut feature; some objects were at the base of the subsoil and others at the interface between it and the underlying 'midden' deposit (705). Although it was considered possible that not all the hoard was recovered as its location was outside the area of the area subsequently excavated in 2005 (Andrews, Jones and Schuster 2009, 75), no further finds were made in the course of the 2010 excavations despite a careful search. It was suggested that the hoard may have been placed in a bag on the ground surface and covered with soil (*ibid.*, 80).

Ebbsfleet VI
There is some uncertainty as to whether this scatter of eight fragmentary objects comprises a hoard, but it is considered better to include it in the hoard sequence than exclude it. The scatter was found during excavations in 2005 and is more or less equidistant from hoards IV and V. No complete or nearly complete objects were found and no items were associated. Two items were in or near to the top of postholes and may have been placed in them. It was suggested the fragments 'may relate to several depositional events' (*ibid.*, 77; Jones 2009a–b).

Ebbsfleet VII
Hoard of 17 items found in the subsoil (this report, see Vol 2, Fitzpatrick, Chap 2 for details).

Ebbsfleet VIII
Two gold bracelets found next to each other in the subsoil (this report).

In addition, three objects were found as single finds in Zone 4, two of which are shown in Table 3.1 as 'scatter (Z4)'; the tip of a socketed axe (ON 3500) and part of a Ewart Park sword blade (ON 3508) were not in cut features, but part of an ingot was found in a pit (254124).

The burial contexts
As discussed above, the possible midden deposit found in Zone 4 in 2004 is now thought to be a naturally formed deposit which contained quantities of domestic refuse such as pottery and animal bone. The hoards found in 2004 were later than this deposit.

The topographic setting of the hoards is distinctive as is their context. Nearly all of the hoards lie to the south of the low hill at Ebbsfleet Farm and at the neck of the peninsula where they would have been within 100m of the sea (Fig 3.21). Only Hoard II is to the north of this hill, approximately 450m away, but it is also within 300m of the Bronze Age shoreline. Hoards III–V, VI/scatter and VII–VIII are all in a lower lying area that was seasonally flooded or inundated.

Hoards III–V and VII–VIII do not appear to have been placed in deep pits, and the same is also true of Hoard/scatter VI. Instead, it seems likely that they were placed either on the ground surface, perhaps in organic containers, and possibly covered over, or that they were buried in shallow scoops within the topsoil/subsoil. Some excavated hoards appear to have been placed in organic containers, for example at Petters Field (Needham 1986), though they occur regularly in pits and occasionally in pots that were placed in pits.

Compared to what are thought of as 'classic' founder's hoards most of the Ebbsfleet hoards are quite small. Although past studies have tended to concentrate on larger hoards because of the range of associations they provide, it is clear that there is considerable variety in the sizes of the hoards and that many are quite small, comprising less than 20 items of a variety of types including ingot fragments (Turner 2010, 46–55). Most

of the small Ebbsfleet peninsula hoards are typical of this pattern.

While it is clear that the Ebbsfleet peninsula has a remarkable number of Late Bronze Age hoards, this needs to be seen against the background of the very large number of these hoards either side of the Thames Estuary (Turner 2010; Marazek 2006, 28–44) and the number of these other hoards, at least seven, found close to the contemporary coastline on both the Isle of Thanet and on the mainland on the western shore of the Wantsum Channel. The Thanet hoards include 13 ingot fragments from Cliffs End Farm (McKinley *et al* forthcoming) and the important finds from Minnis Bay, Monkton, and Minster (Perkins 1991b, 259–61; Lawson 1995, 277, Champion 2007b, 112–14; Andrews *et al* 2009, 80–1, fig 2.8, B; Fig 3.21), and represent a marked concentration of finds (Turner 2010, 100).

Other excavated 'Carp's Tongue' hoards

The best known examples of other hoards excavated *in situ* are from Petters Field, Egham, in Surrey (O'Connell 1986, 13–14, 59–60, fig 3, 17, pl 4; Needham 1986; Marazek 2006, 35–6, Abb. 5–7). Here, two hoards and a scatter of objects were found in a ditch terminal. The two caches were 0.2m apart and at the same level in the ditch. It is possible that they were placed in separate small pits or separate bags made from organic materials which contained 33 and 45 items respectively. Nine other objects, most of which were found 4m away, were considered to be a scatter of finds. It was suggested that the two hoards represented different types of metal and sizes according to the intended recycling or manufacture and the scatter was considered to represent debris from metalworking (Needham 1986, 59–60). However, as eight of the nine other objects were found within 2m of each other and at the same level as the two hoards it is possible that this material, which comprises small fragment of axes and ingots, was also deposited as a hoard. The ninth object, a pin, was found less than 1m away from the two hoards and it may have been displaced from one of them, or represent a separate deposit or loss rather than being associated with the scatter or hoards. After the hoards were deposited the ditch was deliberately backfilled (O'Connell 1986, 14).

The Monkton Court Farm hoard was found 8km to the west of Ebbsfleet. Although a few finds had been removed by metal detectors at the time of initial discovery, most of the hoard was recovered in excavation (Perkins 1991b). Some objects found 'near the post' may have been dispersed from the hoard but the sword and axe fragments found some 67m away seem unlikely to derive from the hoard and instead they probably represent a second, or possibly even a third, separate find (*cf* Perkins 1992a)

In Kent, several Ewart Park phase hoards have been found recently by metal detector users, and with the advent of the Portable Antiquities Scheme, more information is available about their context than for most old finds. While detailed contextual information is often lacking and it is hard to assess how individual hoards have been dispersed by ploughing and other factors, the evidence suggest some variety in the immediate context of the hoards.

In some cases it seems likely that hoards were buried in pits. At Crundale the main group of 185 items was in a small area approximately 0.75m in diameter and at a depth in the ploughsoil of between 0.3–0.55m. Three items found at a slight distance may have been dispersed by ploughing (Worrell 2005a). Such a close grouping suggests that the hoard had been in a cut feature until relatively recently. The recently discovered Boughton Malherbe hoard contained 352 items and was buried in a pit (Matthews *et al* 2012). In other cases the distribution of finds is more diffuse. At Hoaden 24 items are recorded as having been found in an area of about 7m^2 (Roberts and Doshi 2009a); at Lenham 13 items were found in the ploughsoil within a diameter of 20m, and at a depth of no more than 0.3m (Richardson 2007); at Offham 26 items were found in an area of 25m^2 (Roberts and Doshi 2009b); and at Tilmanstone 21 items were 'dispersed over a small area' (Worrell 2007). These distributions would be consistent with ploughing removing objects from a pit or similar feature and then gradually dispersing them over the years.

However, in some cases what might initially be thought to be a dispersed hoard seems as likely, if not more so, to represent two or more hoards. At Chislet, three separate finds were recorded. Find 1, which was of six certain or possible ingot fragments, and Find 2, comprising a spearhead and three ingot fragments, are recorded as being compact groups. Find 3 which contained two ingot fragments was thought to be a 'scatter; possibly dispersed by the plough' (Worrell 2005b). In the Hollingbourne 1 hoard, 15 items were found at a depth of no more than 0.3m and within a crescent-shaped area approximately 15m by 10m. Subsequent excavation revealed a small gully of uncertain date but no further finds. A subsequent controlled metal survey (Hollingbourne 2) recorded five responses approximately 20m downhill from the first find. Four of these locations were very close together and were of an axe head and three ingot fragments. Excavation here revealed three further axes, placed vertically, blade downwards, with fragments of six ingots, two spearheads and a sword blade wedged in between them, all in a small pit. Although it is possible to see the second group of finds as part of same hoard, it seems more likely that it represents a second, separate, find located some 20m away (Portable Antiquities Scheme 2003, 14, fig 9; Worrell 2005c–d). Lastly, three Late Bronze Age hoards have been found within an 800m area at Attleborough, Norfolk (Lewis 2011, 14), while four Llyn Fawr phase hoards of socketed axes were found within 20m of each other at Langton Matravers, Dorset (Roberts *et al* in prep.).

Pending a wider study of the immediate context of Ewart Park hoards, the Chislet, Hollingbourne, Monkton Court Farm and Petters Field finds can be taken to show that multiple deposition, often of relatively small groups of material, is well established. The difficulties in interpreting the scatters of material at Petters Field and the Ebbsfleet peninsula are similar,

though the Petters Field scatter was found in a much smaller area. It is not clear how often hoards were placed in pits or similar features. At Ebbsfleet the evidence indicates consistently that if the hoards were placed in holes, they were not deep enough to cut into the subsoil.

Sacred or profane?

As most Ewart Park phase metalwork hoards in south-east England contain broken bronze objects and ingots they have traditionally been interpreted as hoards of scrap metal buried by metalworkers; the so-called 'founders hoards'. However, while the Ebbsfleet peninsula hoards are, with the exception of the gold bracelets in Hoard VIII, clearly of scrap metal, no evidence has been found in any of the recent excavations there for metalworking. Crucibles, droplets of metal, moulds or other manufacturing waste are absent (*cf* Andrews *et al* 2009, 81) and this may be contrasted with the evidence for metal working at Ellington School, Ramsgate, which includes droplets of metal and slags (Boden 2007, 28). Instead the hoards seem to have been deposited after the settlement was abandoned.

While the Monkton Court Farm hoard, some 8km to the west, was thought to be associated with manufacturing waste (Perkins 1991b, 259), the evidence is circumstantial, although it is clear that, as at Ebbsfleet, there is broadly contemporary settlement. The scatter of finds from Petters Field that may represent a hoard was also suggested to be derived from metalworking, but in general hoards are not found in contemporary settlements. The hoard at Ellington School, Ramsgate appears to have been buried next to the settlement (Boden 2007, 28) and this might also have been the case at Minnis Bay where the relationship of the hoard to the settlement is unknown (Champion 1980, 231–3; Turner 2010, 155). Indeed, where assemblages of Late Bronze Age clay moulds for casting objects have been found in settlements fragments of scrap metal or casting waste are rare (Turner 2010, 44–5). No metal was found at Springfield Lyons, Essex, where the mould debris was found in two separate foundation deposits (Needham 1987), while at Dainton, Devon, just three fragments of bronze were recovered (Needham 1980, 81, 209–10, fig 14).

The finds from other zones along the road scheme may be more typical of material associated with manufacturing. If the gold object from Zone 7 is a Late Bronze Age 'lock-ring' it will be contemporary with the hoards on the peninsula, and the gold finger ingot fragment from Zone 6 may be too. The broken Late Bronze Age tanged chisel from Zone 6 could be a domestic loss or from a hoard disturbed in antiquity, but the pin from Zone 23 appears to be a casual loss. The interpretation of the three single pieces from Zone 4, part of a sword blade, part of a socketed axe, and part of an ingot, is also uncertain. While they could derive from Hoards III–VI, the objects could comprise hoards in their own right, or they may be casual losses or discards. It is noteworthy that metal objects are found not infrequently on other Late Bronze Age sites on Thanet such as Northdown, Margate (Smith 1987, 286, fig 18. M4–6) and Cliffs End Farm (McKinley *et al* 2013, 178–9, fig 6.15). These finds represent a significant concentration apparently from settlement contexts (*cf* Champion 1980).

It has been suggested that the number of hoards on Thanet should be seen in relation to the proximity of the Isle of Thanet to the Continent and a suggested role as an 'entrepôt' (Perkins 1991b, 262–3; 1992a, 269). The Ewart Park hoards in Britain are one part of a much wider distribution of scrap metal hoards both sides of the Channel and into the Atlantic (Briard 1965; Burgess 1968, 17–19, 38–9, fig 12–14), and it is possible that some objects that are thought of as typically insular, for example Ewart Park swords, were also made in continental Europe (B Roberts and S Matthews pers. comm.). One interpretation of the Ebbsfleet peninsula hoards would be to see them as deriving from the breaking up of large hoards or shipments of scrap metal from France as soon as they reached Britain (eg, Needham 1990, 132–3). The number of the hoards from Ebbsfleet may well reflect the fact that the peninsula would have offered a sheltered and relatively safe landfall after one of the shortest Channel crossings (Perkins 1991b, 263; 2006; Allen 2012). It may be that the redistribution of cargoes of scrap metal started at landfall.

As Carp's Tongue hoards are of scrap metal it is often thought that 'a votive purpose is most unlikely' (Perkins 1991b, 259). As has been widely discussed, this functional categorisation prejudges the reasons for the deposition of the hoards and any divide between the sacred and profane was not clear cut (eg, Taylor 1993, 3–22; Turner 2010, 10–17). For example, one possibility is that on landing or leaving the Ebbsfleet peninsula small parts of cargoes were deposited as votive offerings. The presence of Hoard VIII, the two gold bracelets, is important in this regard. The bracelets do not appear to be scrap metal but seem to have been deposited in the same way and in the same place as the bronze hoards. These bracelets (Eogan Variety 3) are a characteristically British type that forms part of a wider series of gold bracelets from Britain and Ireland (Eogan 1994, fig 38–9). As well as the Ebbsfleet peninsula pair, there are finds of Variety 3 bracelets from Wiltshire, the Isle of Wight and Norfolk. In addition, the two Bexley Heath, Kent hoards (Clinch 1908, 338) both contain examples of the very similar Variety 4 bracelets, but it is suggested that the origins of this insular series lie in continental Europe where they were more commonly made from bronze (Eogan 1994, 92). The two gold bracelets from Zone 4 were definitely not part of Hoard VII, and similarly, the two large hoards of gold bracelets from Bexley Heath, Kent comprised only bracelets, and they may have been found in a Bronze Age settlement (Clinch 1908, 338).

Elsewhere gold bracelets occur occasionally alongside bronze objects in hoards. These include the Beachy Head, Sussex Carp's Tongue hoard which may be an early hoard, and an atypical one, because of its emphasis on 'personal' belongings rather than scrap metal (Colquhoun and Burgess 1988, no. 109, no. 683; Brandherm and Burgess 2008, 142, 156, no. 167). In

general, however, gold objects were not included in large hoards, the only example being the Heathery Burn, Co. Durham deposit, which included a Variety 4 bracelet and a lock-ring (Eogan 1969, 135–7; 1994, 91, 156). The objects are usually complete rather than broken, as in the small Portfield, Lancashire hoard (Blundell and Longworth 1967; Eogan 1969, 137) and the hoard from near Berwick-upon-Tweed, Northumberland (Needham *et al* 2007). Instead most gold hoards are comprised solely of gold objects and their votive deposition seems likely. Although gold hair rings ('ring money') are typically found as singletons, they should also arguably be interpreted as small votive hoards, and a number of recent finds from Kent (eg, Varndell 2005; 2008a; 2008b; 2010) mean that this type of object is no longer absent from the county (*cf* Eogan 1994, 89, fig 42; Meeks *et al* 2008). All of this suggests that the Ebbsfleet hoard of gold bracelets was a votive deposit.

Lastly, Ebbsfleet Hoards III–VIII were deposited in a low-lying area that was periodically inundated or flooded. The votive deposition of numerous Ewart Park swords in the Thames at London is well established (Needham and Burgess 1980, 444–9; Marazek 2006, 38–9) and this is part of a wider pattern of the deposition of metalwork near watercourses (eg, Yates and Bradley 2010). Slightly earlier examples of Bronze Age metalwork from watery contexts on Thanet include a late Wilburton sword from what may have been a spring at Shatterling (Perkins 1995a, 472) and a Middle Bronze Age palstave from a pond at Thanet Earth (Rady 2009, 18). In Kent at least some Late Bronze Age objects, including Ewart Park swords, have been found in the River Medway at Chatham (Jessup 1933, 185–6, fig ii; Turner 2010, 28) and the slightly earlier Broadness Hoard was dredged from the sea. Smith (1910, 161, fig 6) is specific that the Broadness hoard came from the 'ballast' below the clay and peat in the bed of the river off the west side of Broadness between Greenhithe and Northfleet. It is possible that this represents a wreck site but the statement that the finds were from the 'ballast;' suggests that the hoard is unlikely to have come from what was once dry land since lost through erosion and/or rising sea level (*cf* Champion 1980, 225). Instead it may represent a deliberately placed deposit made at sea (*cf* Samson 2006).

Conclusion

All the Ebbsfleet peninsula hoards, both of bronze and of gold, are likely to date to either the later part of the Ewart Park phase, between *c* 920–800 BC, or perhaps to the earliest part of the Llyn Fawr phase, *c* 800–750 BC. Even so, it seems unlikely that all the Ebbsfleet hoards were deposited in a single event. They form part of a wider pattern of large scale transport of scrap metal in south-east England and the neighbouring regions of continental Europe and its deposition in hoards. The involvement of the people of Thanet in trade may explain the relatively high number of bronze objects from settlement-related contexts; the gold ornament from Zone 10 and possibly the gold ingot fragment from Zone 6 may hint that this involvement allowed considerable status to be accrued. As one of the landfalls for the shortest Channel crossings, the Ebbsfleet peninsula may have had a special role in this trade and also a ritual significance.

The very wide distribution of Carp's Tongue hoards, well into southern Spain, and of Atlantic cauldrons and feasting equipment, may also provide one explanation for the far flung origins of some of the people buried nearby at Cliffs End Farm in the Late Bronze Age. Their childhood residences include the Mediterranean and also northern Scandinavia (McKinley *et al* 2013).

Early and Middle–Late Iron Age (700 BC–AD 43)

The Iron Age evidence is considered below, where possible, in the following pottery based phases: Earliest Iron Age (8th–6th centuries BC), Early–Middle Iron Age (5th–4th centuries BC) and Middle–Late Iron Age (4th–1st centuries BC). The Earliest Iron Age is poorly represented and it is unclear to what extent, if any, it overlapped with Late Bronze Age Plain wares. Early–Middle Iron Age material is relatively well-dated by radiocarbon dates on charred residues, typology and stratigraphic sequences, but the date at which this pottery first appeared is also uncertain. Although no groups could be dated to the 6th century, it seems likely that Early Iron Age material appeared at this date and it continued into the 4th century, overlapping with the Middle Iron Age wares. Despite the large assemblage from Zone 6, the date at which Middle Iron Age pottery passed out of use also remains unclear and what is described as Middle–Late Iron Age pottery here appears to have continued in use into the middle of the 1st century BC, a time which is usually described as Late Iron Age.

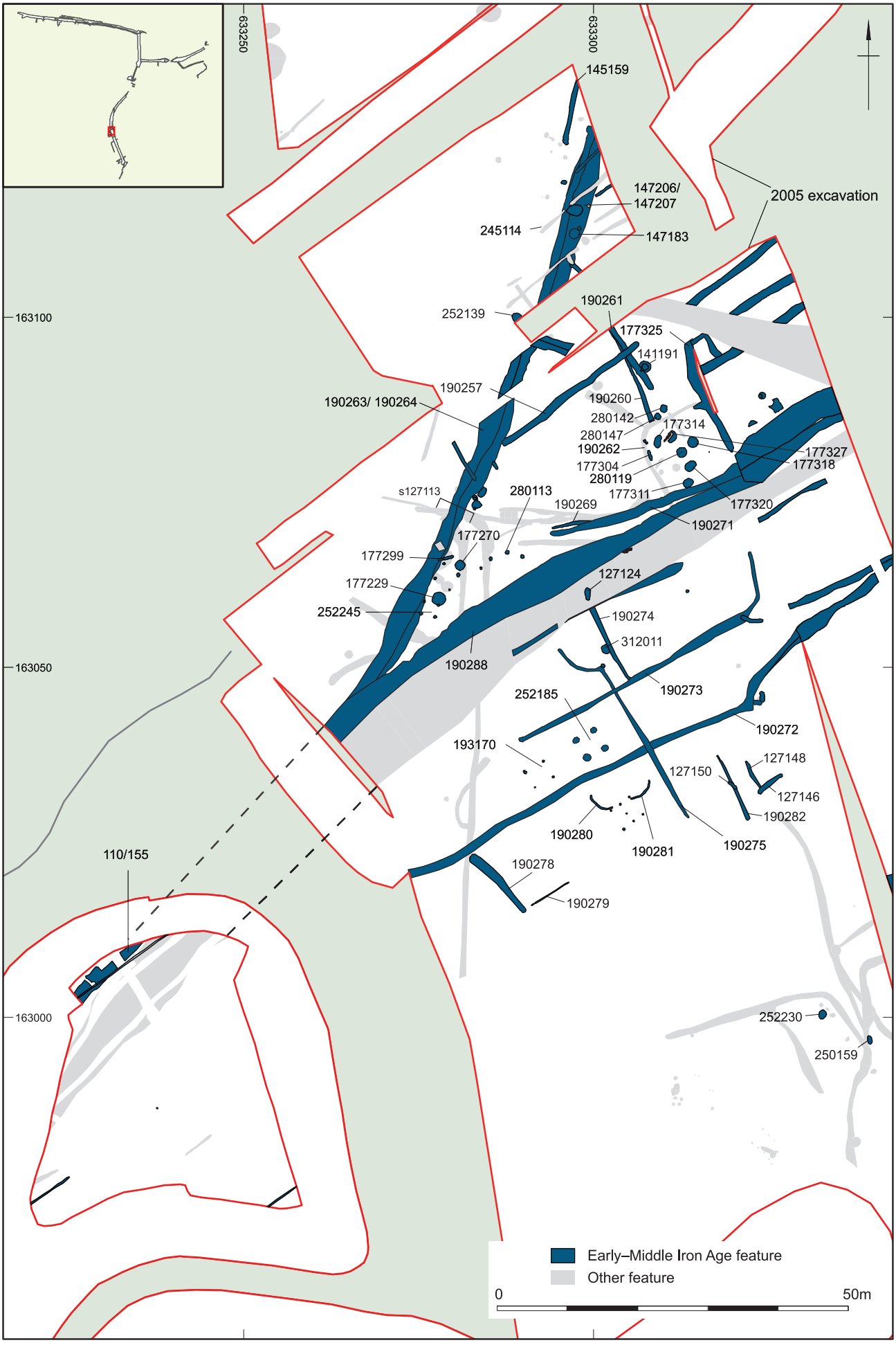
Zones 1, 2 and 3

Iron Age

Feature 151001 (not illus), interpreted as a tree-throw hole, though possibly a rather irregularly shaped pit, lay towards the north end of Zone 3 and was the only earlier Iron Age feature in the southern part of the Ebbsfleet peninsula. It measured 2m by 1.4m, was 0.22m deep, and contained a fairly large assemblage of Early to Middle Iron Age pottery, fragments of clay pedestals and triangular brick (oven furniture, possibly associated with salt working) and a piece of quern stone. Visibility was poor in this area and no contemporary features were identified. However, medieval ditches 172053 and 172054, located *c* 17m to the south-west of feature 151001, contained residual Iron Age pottery and worked flint, indicating Early to Middle Iron Age activity in the vicinity.

A small spread of Late Iron Age pottery (190345) was recorded at the interface of the subsoil and underlying

Fig 3.22 (opposite) Plan of Iron Age features in Zones 4, 5 and Weatherlees Pond


633250
633300
163100
163050
163000
145159
147206/
147207
147183
245114
2005 excavation
252139
190261
177325
141191
190257
190263/ 190264
190260
280142
177314
280147
190262
177327
177318
177304
280119
177311
177320
s127113
280113
190269
190271
177270
177299
177229
252245
127124
190274
312011
190288
190273
252185
190272
193170
127148
127150
127146
190282
190280
190281
190275
190278
190279
110/155
252230
250159
Early–Middle Iron Age feature
Other feature
0
50m

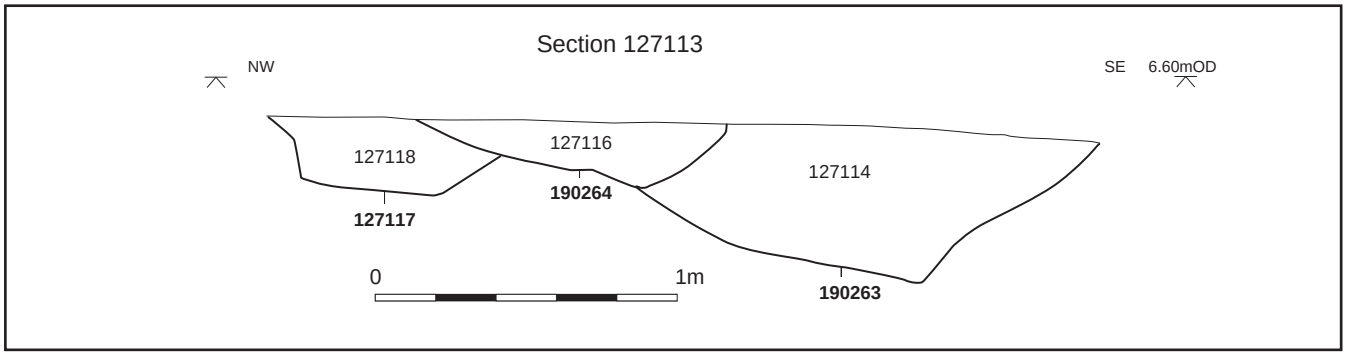


Fig 3.23 Section of ditches 190263 and 190264 (Zone 4)

brickearth in the northern part of Zone 2, but did not appear have been contained within a feature. A few sherds of residual Middle to Late Iron Age pottery were also recovered from the fills of the medieval ditches along the western edge of Zone 2.

Zones 4, 5 and Weatherlees Pond

'Land Division' 190263/190264

A phase of Middle to Late Iron Age activity was evident in the north of Zone 4, in the form of a fairly substantial boundary aligned NE–SW (ditches 190263 and 190264, Figs 3.22–3). These ditches cut the Late Bronze Age T-shaped arrangement of linear ditches (see above) and suggest a re-organisation of the landscape during the Iron Age. The new boundary was subsequently recut and shifted slightly to the north, with ditch 190264 replacing 190263. Both ditches had wide V-shaped profiles and had been allowed to silt up naturally. This boundary continued into and beyond Zone 5 to the north. To the south it was cut by the large Middle to Late Iron Age ditch 190288.

Further Iron Age features were recorded along the northern edge of Middle/Late Iron Age ditch 314 (see below) on the Weatherlees Pond site. The ditches shared the same broad east-west alignment as 'land division' 190263/190264 in Zones 4 and 5, and were probably part of the same boundary. A sequence of ditches and pits were recorded, with the earliest phase represented by ditch 155; a shallow flat-bottomed ditch with moderate, concave sides. Once ditch 155 had silted up it was recut to the south-west by a deeper, U-shaped ditch 110. A large pit 114 was then cut through the silted up ditches. Pit 114 was oval in plan and had steep, concave sides; it was up to 1.1m deep and contained several backfilled or dumped deposits.

Enclosure and settlement

Further Iron Age ditches (eg, 190272, 190273, and 190257) were recorded to the south of the large boundary ditches on Zones 4 and 5, and probably represent enclosures or field boundaries laid out adjacent to the large Middle–Late Iron Age boundary (Fig 3.22). The ditches generally had shallow, concave profiles (between 0.13m and 0.37m deep) and contained naturally derived primary and secondary fills. The features are considered to be of a broadly contemporary phase, but a degree of development to the enclosures was evident as stratigraphic relationships existed between the features.

Structures, pits and postholes

Two truncated possible ring/drip gullies, 190280 and 190281, and associated possible four-post structures (193170 and 252185) were located within or close to the enclosures or field boundaries and may represent the truncated remains of Iron Age settlement features (Fig 3.22). The relatively large quantity of pottery recovered from ditch 190272 supports the picture of Iron Age settlement activity in this area. A truncated possible post-built roundhouse (280113) and associated four-post structure was recorded 4m to the north of ditch 190288. A further four-post structure (252245) lay adjacent to the Middle to Late Iron Age 'land division' 190263. The structure measured 2m by 1.8m and the postholes had a similar form, with a maximum depth of 0.45m. Animal bone, pottery and fired clay were recovered from the postholes and the environmental samples contained charred grain and chaff.

A concentration of Middle to Late Iron Age pits was located towards the north-eastern corner of the zone. The pits were generally oval in plan and had been backfilled soon after they were dug. One (280119) contained dumps of fired clay, pottery and charcoal-rich deposits which contained cereal remains. Contemporary Middle to Late Iron Age pits were recorded to the north

Pl 3.10 Early–Middle Iron Age pit 147183 (Zone 5; view from east)

in Zone 5 and during earlier work on the Weatherlees to Margate pipeline (Egging Dinwiddy and Schuster 2009), and may continue a broad pattern of pit digging towards the edge of the settlement.

In Zone 5, two relatively substantial oval pits of Middle Iron Age date had been deliberately backfilled (147183 and 254111) and contained large assemblages of finds including pottery and animal bone (Pl 3.10). The presence of these features reflects a continuation of the settlement recorded in Zones 4 and, also, Zone 6.

Middle/Late Iron Age

A substantial Middle/Late Iron Age ditch 190288 lay across and dominated the northern half of Zone 4, and at least two recuts (190290 and 190289) extended its period of use into the early Roman period (Pl 3.11). This sequence of ditches had been recorded in earlier excavations to the east and west of Zone 4 (Wessex Archaeology 2008; Egging Dinwiddy and Schuster 2009). Further similar sequences of east–west aligned ditches were recorded approximately 450m to the north at the northern end of Zone 6 (and extending eastwards into Zone 7), immediately to the west during the Weatherlees Pond excavations (see below), and during earlier excavations to the east of Ebbsfleet Lane (Egging Dinwiddy and Schuster 2009) where they followed a north-south alignment. The stratigraphic sequence recorded reflects that observed in previous phases of work and shows that a substantial Middle/Late Iron Age enclosure ditch, which may have been partly backfilled, was recut by a large Roman ditch. There is a strong possibility that these ditches all belonged to a single, large enclosure occupying the neck of the Ebbsfleet peninsula (see below).

Middle/Late Iron Age ditch 190288 had a wide flat-bottomed profile and was a maximum of 5.95m wide and

Pl 3.11 Late Iron Age ditch 190288, and recuts 190289/90 (Zone 4; view from south-east)

1.85m deep. Pottery recovered from the ditch suggests that the feature was open during the Middle Iron Age, and had finally silted up in the Late Iron Age. The profile and sequence of fills within the ditch were broadly similar to those observed in previous excavations to both the east and west. The lower deposits were naturally derived and the lowest fills may have been waterlain; a distinctive laminated deposit (127098) was present in the base of the ditch. Pottery recovered from the lower fills has been dated to the Middle Iron Age. Some evidence for deliberate backfilling was present in the upper deposits, (127101 and 127106), which contained pottery of Late Iron Age date. The size and shape of these ditches suggests they may have had a defensive function, and the Middle/Late Iron Age ditch may have been purposefully flooded to create a 'moated' boundary to the settlement.

In Zone 5 a series of at least three relatively narrow, east to west aligned gullies (190299–190302), 7.5m apart and extending over a distance of at least 20m, lay approximately 37.5m to the north and parallel with

Pl 3.12 Late Iron Age ditch 314, and recuts (Weatherlees Pond; view from east)

Middle/Late Iron Age ditch 190288 in Zone 4. There is a possibility that this group of parallel features was related to the large Middle to Late Iron Age ditch and this is discussed further below.

At Weatherlees Pond a sequence of large Middle/Late Iron Age to early Roman ditches (314, 200 and 105) was recorded crossing the stripped area for 35m (Pl 3.12). These ditches show the same stratigraphic sequence observed in Zone 4 (35m to the east) and formed part of the same enclosure that dates to the Middle/Late Iron Age and was dug to enclose an area at the head of the Ebbsfleet Peninsula.

The earliest ditch (314) in the sequence was of Middle/Late Iron Age date. The ditch was aligned roughly east-west and had a wide, flat-bottomed profile; it was up to 1.5m deep and contained a sequence of naturally-derived deposits. The basal fills may have been waterlain; a laminated deposit had formed after the initial stabilisation of the sides and suggests that slow silting had occurred in the base of the ditch. Several secondary deposits formed above this layer and there was some (limited) evidence of eroded bank materials within the sequence. Ditch 314 was cut by early Roman ditch 200.

Zone 6

Early to Middle Iron Age Phase I

In the earlier part of the Iron Age there is no evidence for occupation within Zone 6; instead the area was crossed by a sequence of tracks and droveways, which were generally aligned NW–SE and NE–SW (Fig 3.24). In the case of metalled trackway 170111 the route lasted throughout the Iron Age and beyond, whilst other tracks defined by pairs of parallel ditches went out of use more rapidly, and were replaced. The ditches that defined the trackways did not yield a large quantity of finds, perhaps indicative of their distance from any contemporary focus of settlement, evidence for which was also largely absent from the adjacent zones. A major junction between tracks is likely to have been present a few metres to the west of the zone, and another junction was present towards the south of the zone.

Although some of the features discussed above may have been in existence during the Bronze Age/Iron Age transition, the Early Iron Age within Zone 6 appears to have been dominated by the presence of a metalled trackway which was orientated in a NE–SW direction and ran over hollow-way 248162 of the previous phase. The trackway, 170111, was formed of a densely packed layer of small rounded river pebbles forming a robust surface averaging around 5.5m wide. (Pl 3.13). Towards the centre of the 50m length uncovered, the trackway was as wide as 11.8m, but it remains unclear whether this extra width represented a working area, or the remnants of a branch of the route towards the north-west. Similarly an isolated area of metalled surface (170130) situated 10m or so to the south-east may show that the track also originally branched off in this direction.

Trackway 170111 was a long lived feature, and hence proved to be difficult to date directly, although on

Pl 3.13 Iron Age (and later) trackway 170111; note animal bone incorporated into metalled surfaces (Zone 6; view from north-west)

stratigraphic grounds its formation is likely to have taken place within the earlier Iron Age. Middle or Late Iron Age pot sherds were used to consolidate the metalled surface where the trackway ran into Zone 7 to the north-east. It is possible that an area of flint pebble surface within the western trench (Trench 9b) of Perkins' 1990 evaluation (Perkins 1992a) represents the continuation of the trackway to the south-west, where it may have led to a small inlet at the edge of the Wantsum channel.

Towards the north of the zone ditch 170087 (only a few short segments of which had survived later truncation) ran in a NNW–SSE direction, and formed what was a sinuous and fairly short lived boundary which curved slightly to the east at its southern end to respect trackway 170111. To the west ditch 170044 ran in an east-west direction, as did ditch 302119 to the east, following an alignment originally laid out in the Late Bronze Age, but also reflecting the local topography, and probably marking the boundaries of related enclosures. To the north of ditch 302119, ditch 302125 ran in a WNW–ESE direction, turning to the south at its eastern end, and with ditch 302119 forming a small enclosure likely to have measured around 10m across. Further to the north, ditch 262227, which ran NW–SE from the eastern limit of excavation prior to terminating (and the alignment of which continued into the southern end of Zone 7) represented a further boundary, possibly related to ditch 302119.

Towards the centre of the zone a wide trackway or droveway was defined by ditch 249101, and two ditch segments 244251 and 125215, and would have intersected with trackway 170111 a few metres beyond the limit of excavation to the west. The route was aligned NNW–SSE, and the easternmost ditch (249101) was steep-sided and flat-based, measured up to 1.55m wide and 0.85m deep, and appeared to turn sharply to the north-east at its southern end. The westernmost ditches had suffered considerably more truncation and were smaller but had a similar flat-based profile. As well as delineating a droveway measuring around 11m across, the ditches might have formed the boundaries of large open fields. A second short stretch of track was defined by ditches 170033 and 170034, which ran in a west–east direction beyond the excavation area to the east, and were around 4m apart; these are likely to have linked to the wider trackway defined by ditches 249101 and 244251/125215 to the north-west. The southern limit of the system of fields and trackways within this phase was represented by a NE–SW aligned ditch (190433) with a steep-sided and rounded-based profile which was traced for 46m; its southern end was truncated.

Early to Middle Iron Age Phase I/II

In the north of the zone the small enclosure formed by ditches 170087, 302119 and 302125 was redefined, initially by ditches 302120 and 295096 (Fig 3.24); the enclosure was open to the south, but of unclear form to the north, being cut away by large ditches of both later Iron Age and Roman date. Ditch 262227 was recut by ditch 262215, which was slightly larger, and situated a little further to the north. Parallel to ditch 302119 and around 6m to the west a further trackway was formed by ditches 302131/170094 and 302129, the latter truncating enclosure ditch 170087 (above). The new trackway, which measured up to 4m across, ran in a NNW–SSE direction, and would have connected to trackway 170111 to the south-east.

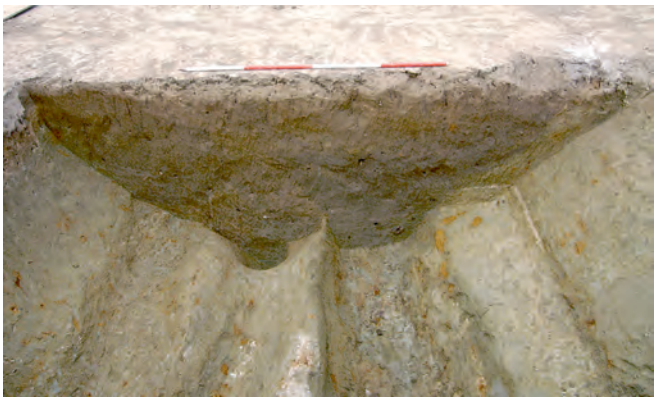
Early to Middle Iron Age Phase II

The phase I trackway (ditches 249101 and 244251/125215) was replaced by a narrower track also defined by parallel ditches aligned NW–SE and up to 2.5m apart (Fig 3.25). The western part of the track was bounded to the north by ditch 249096 and to the south by 249097. Like ditch 249101 of the previous phase, ditch 249096 turned to the north-east at its south-eastern end where the track continued, with the southern side defined by ditch 190488. Towards its southern end, ditch 249097 turned to the south, where it was cut by a sequence of ditches of Roman date.

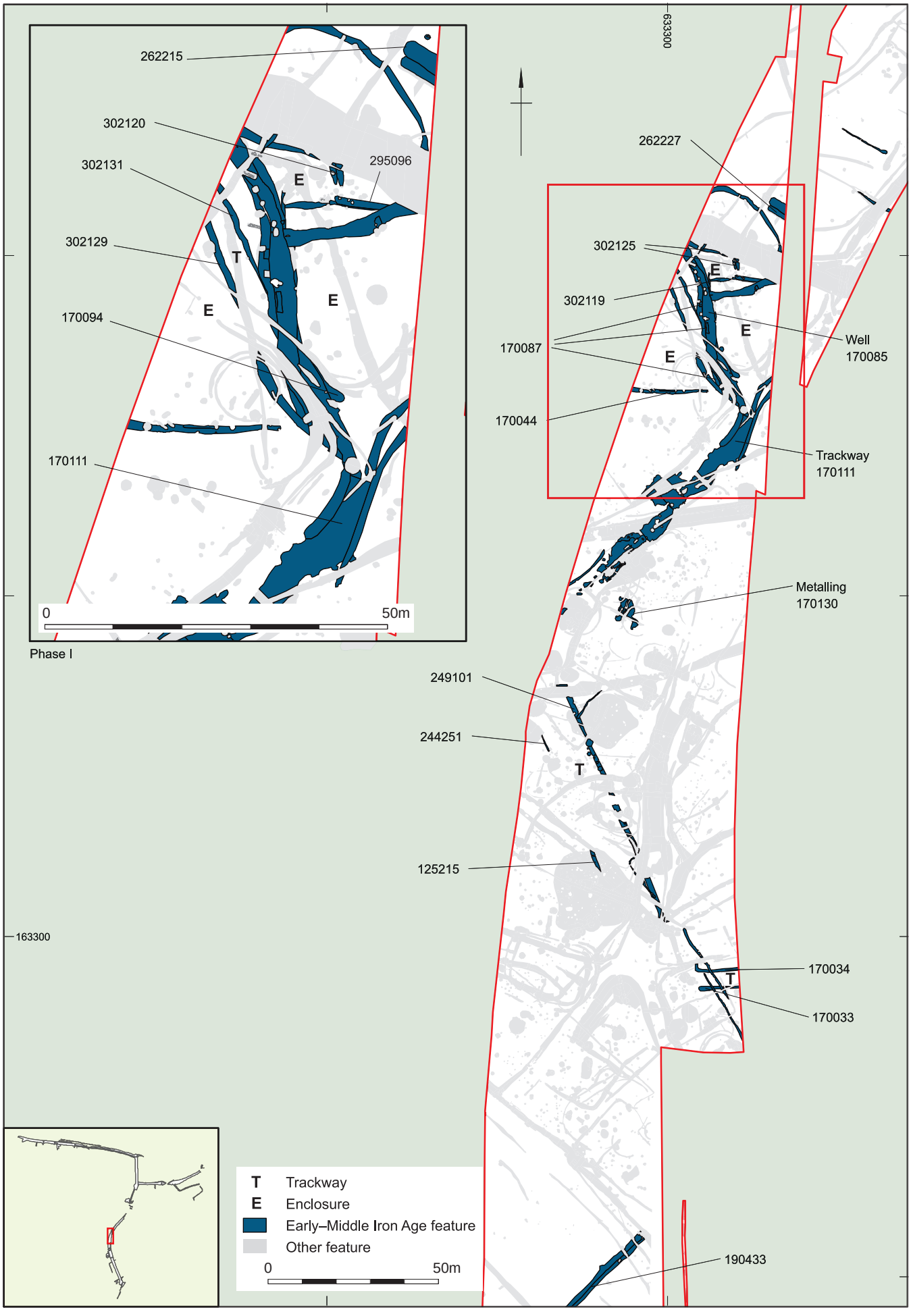
At the northern end of the zone a major boundary ditch (302123), aligned NNW–SSE, cut both ditches (302129 and 302131) of the earlier trackway, the southern end of the ditch curving sharply to the south-west, where it turned to run parallel with the northern edge of metalled trackway 170111 (Pl 3.14). The ditch had a steep-sided profile with a concave base, measured up to 1.3m across and 1.05m deep, and was noticeably larger towards the north. The southern edge of the trackway was similarly redefined by ditch 269069, the area between the ditches forming a 'funnel' that narrowed that part of the track to a width of around 4m. Towards the trackway's northern end, ditch 302118 aligned roughly east-west, replaced ditches 302119 and 295056 of the previous phase. Further to the north, curvilinear ditch 169002 formed the northern limit of the enclosure, likely to have been a small field or paddock.

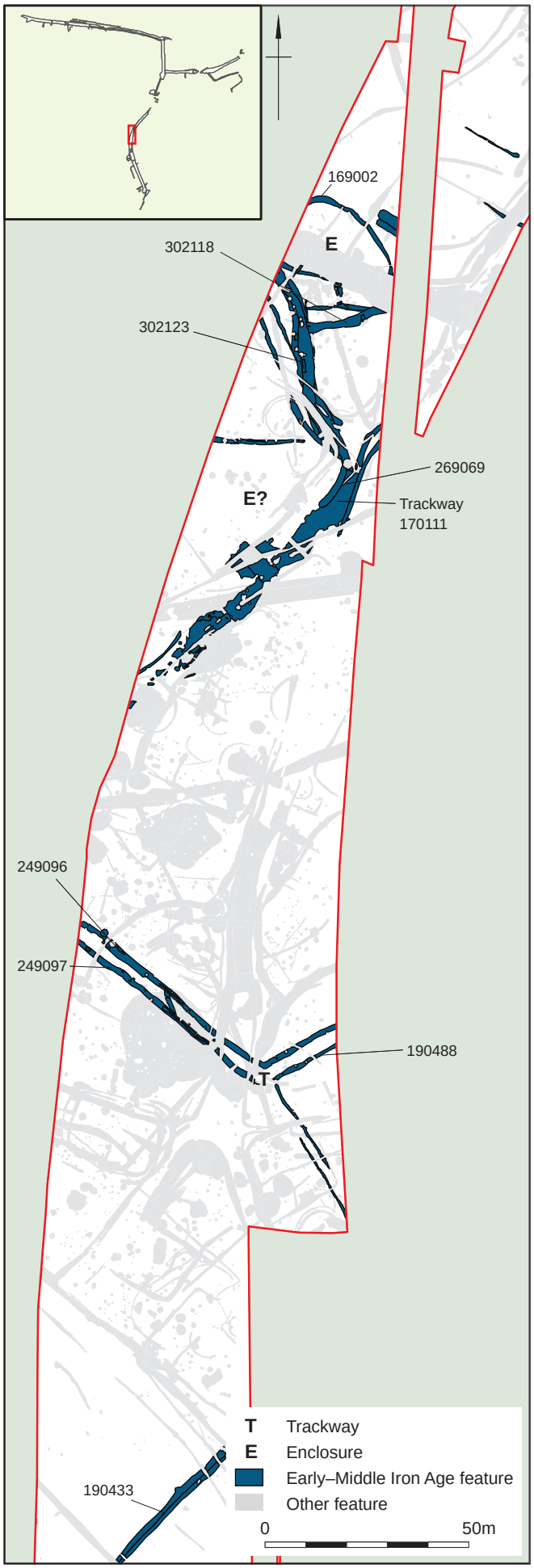
Early to Middle Iron Age Phase III

This phase marks the origins of Iron Age settlement in Zone 6, with the appearance of post-built roundhouses situated within domestic enclosures, and forming a broad arc, within the confines of the zone, around an open area with less evidence for occupation to the east



Pl 3.14 Iron Age boundary ditches 170087 and 302122/3 (Zone 6; view from south)


262215
302120
302131
295096
302129
170094
170111
E
T
0
50m
Phase I
633300
262227
302125
302119
170087
170044
Well
170085
Trackway
170111
Metalling
170130
249101
244251
125215
170034
170033
190433
163300
T Trackway
E Enclosure
Early–Middle Iron Age feature
Other feature
0
50m



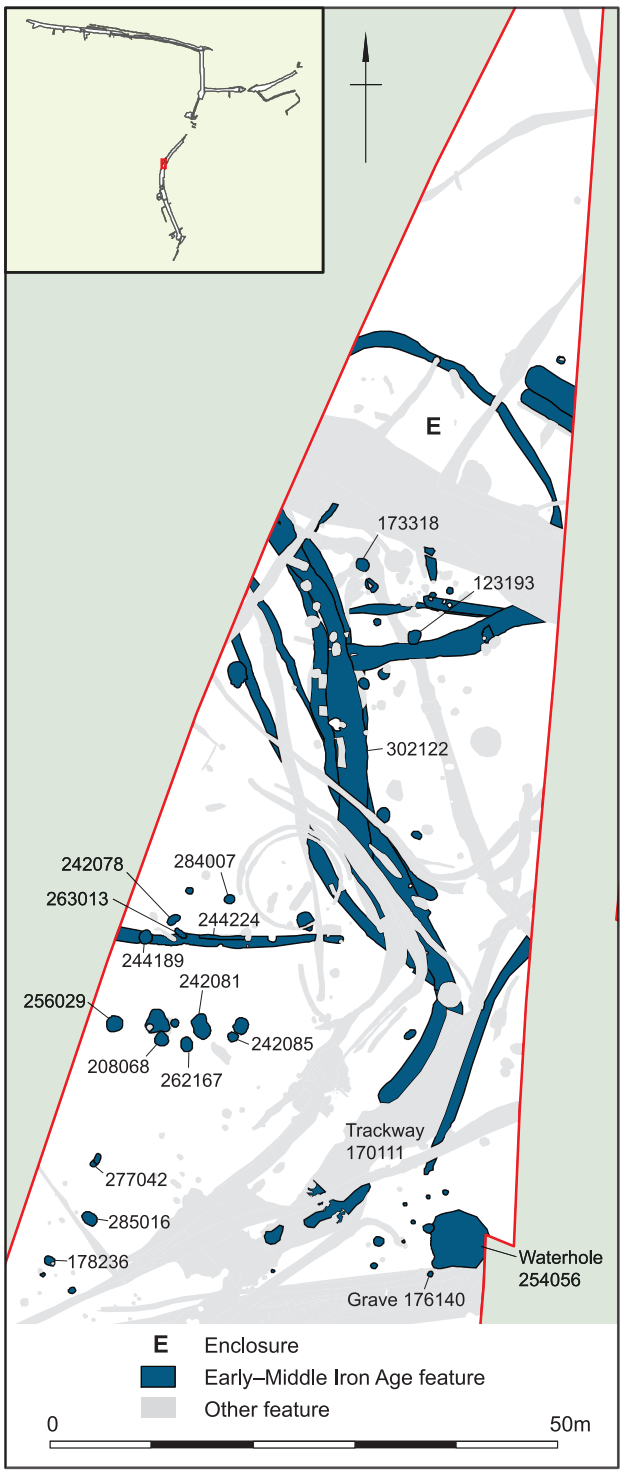


Fig 3.26 (above) Plan of Early–Middle Iron Age (phase III) features in northern part of Zone 6

Fig 3.25 (left) Plan of Early–Middle Iron Age (phase II) features in Zone 6 and southern end of Zone 7

Fig 3.24 (opposite page) Plan of Early–Middle Iron Age (phase I) features in Zone 6 and southern end of Zone 7

(Figs 3.26–7). The features assigned to this phase generally contained pottery of Early or Middle Iron Age date, and some of the pits belonging to this phase are certainly of Middle Iron Age date.

The enclosure of the previous phase to the north of the zone (consisting of ditches 302118, 302123 and 169002) appears to have been retained, although ditch 302123 was recut (as 302122), and cut ditch 302118,

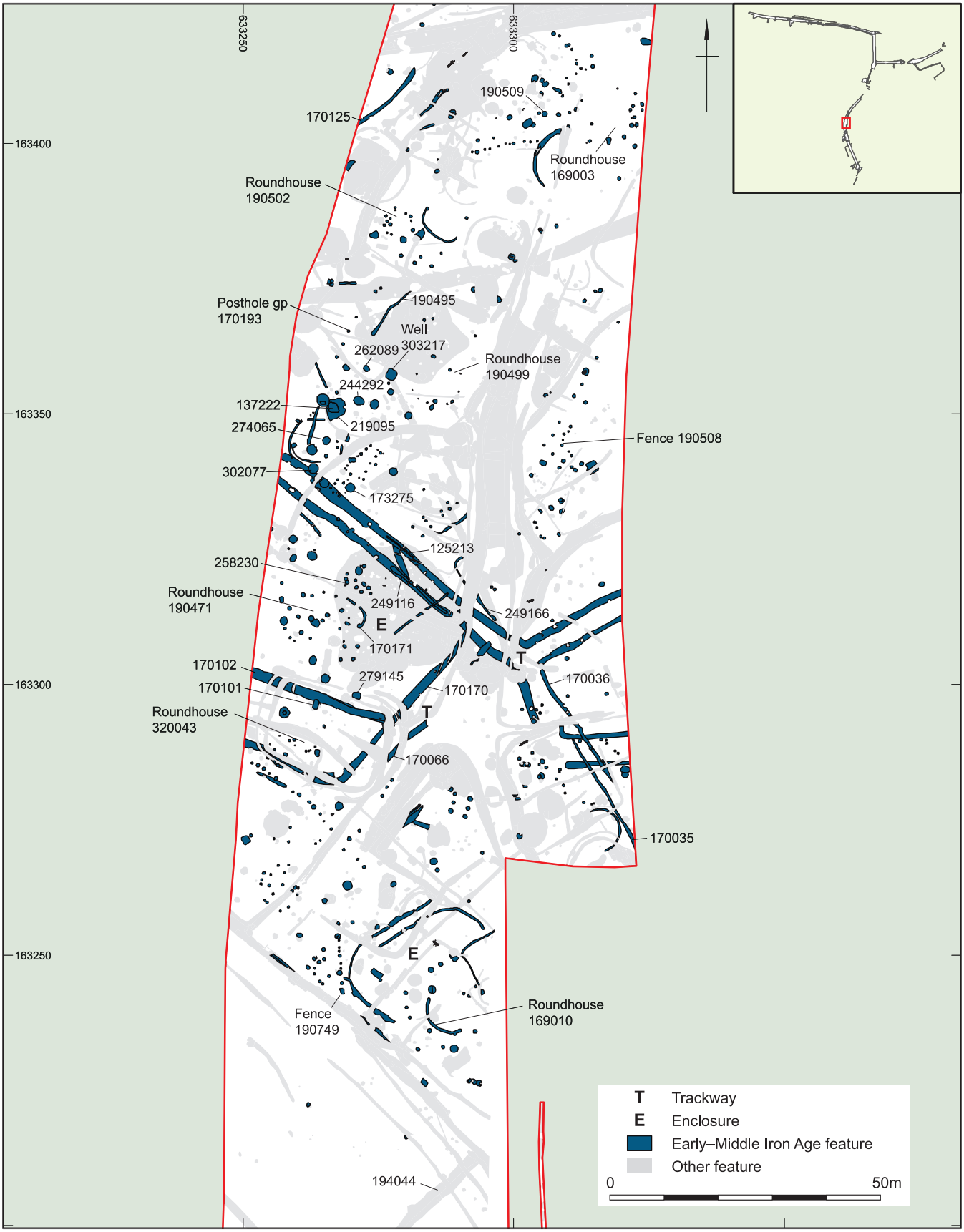


Fig 3.27 Plan of Early–Middle Iron Age (phase III) features in southern part of Zone 6

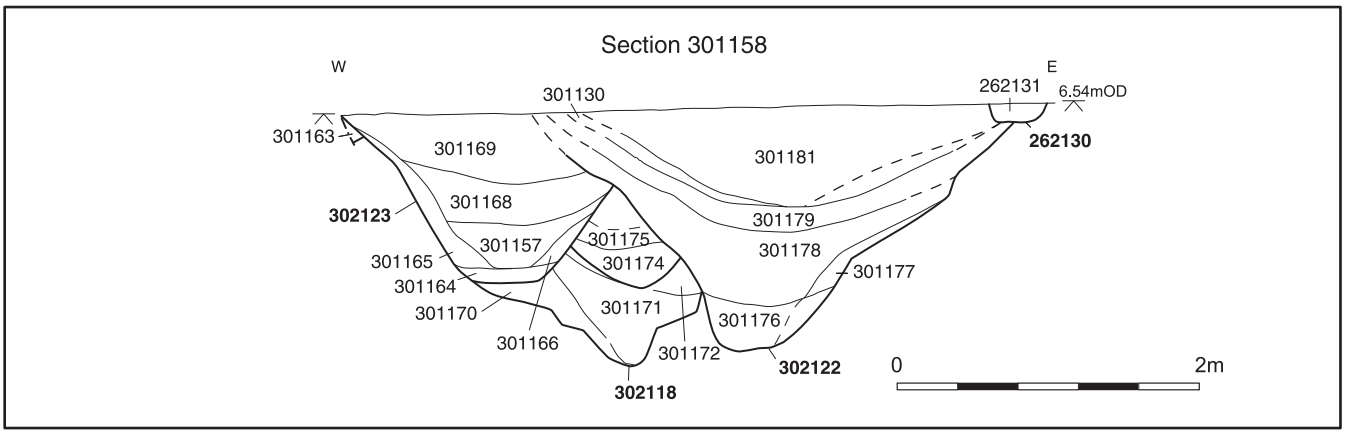


Fig 3.28 Section of Early–Middle Iron Age ditches 302118, 302122 and 302123 (Zone 6)

which had gone out of use (Fig 3.28). Ditch 302122, a substantial feature, had been infilled rapidly and contained over 200 sherds of pottery, indicating an increase in levels of activity in the vicinity. Only a few features inside the enclosure can be assigned to this phase. These include pits 173318 and 123193, although several other pits and postholes contained Iron Age pottery which was not closely dated. Pit 173318, which cut Bronze Age ditch 170084, was steep-sided with a flat base and in addition to sherds of Early or Middle Iron Age pottery, also contained fairly large quantities of burnt flint. Pit 123193 was of a similar size and profile, and also cut the Bronze Age ditch, as well as ditch 302118 of the previous phase, and contained 33 sherds of Middle Iron Age date (5th to 3rd century BC), a fragment of quern stone (ON 3363), and the upper part of a fired clay triangular brick (ON 4057).

Ditch 302122 and trackway 170111 formed two sides of an enclosure situated in the north-west of the zone. This was subdivided by a short length of ditch (244224) which partially recut defunct ditch 170044. To the north, pits 244189 and 263013 (both of which cut ditch 170044), and 242078 were of uncertain function, but pit 284007 was one of a number of steep-sided, often undercutting, flat based pits which are initially likely to have been for storage, followed by a phase of rapid infilling with domestic waste.

To the south of ditch 244224 a group of pits followed a broadly east–west alignment, parallel to the ditch, although they could have respected a positive feature, such as a bank associated with the previous ditch 170044. This group of pits included a further five examples of storage pits reused as rubbish pits, (256029, 208068, 242081, 262167 and 242085), and these contained a mixture of struck and burnt flint, marine shell, fired clay, animal bone and, in total, over 8kg of pottery with an Early to Middle, or Middle Iron Age date, including a fragmentary carinated bowl from pit 262167 that may have been buried while still complete. Around 10m to the south the earlier of two small intercutting pits (277042) may have been dug to dispose of the fragments of at least 11 triangular fired clay objects. Two further storage pits (285016 and 178236) were located towards the south of the enclosure, also containing pottery sherds of Early or Middle Iron Age date. A NE–SW aligned ditch, 170125, lay parallel to trackway 170111, and defined the enclosure's south-eastern edge.

To the east of trackway 170111 was a post-built roundhouse (169003), 14m in diameter and composed of 14 postholes, although these were generally very shallow and others may have been completely truncated. Some of the postholes, especially those on the southern side, were paired with a second post, perhaps indicative of the replacement of some elements of the house. Within the structure a few postholes may indicate internal divisions, and to the east, adjacent to the limit of excavation, a cluster of postholes could mark the position of a porch covering the entrance. Immediately to the west, a curvilinear line of postholes (190509) formed an arc 43m in length which probably enclosed an area approximately 28m by 15m, possibly a paddock with direct access to the metalled trackway immediately to the north-west. Within the area defined by the arc of postholes, pits 303175 and 299078 may have been for the disposal of domestic waste associated with roundhouse 169003 to the east, and contained small quantities of burnt flint and pottery.

About 25m north of roundhouse 169003 a large slightly amorphous feature (254056) was interpreted as a waterhole, the southern side of which cut the northern ditch flanking the Bronze Age hollow-way. The feature, which had a stepped western edge, had a diameter of 5.25m and was excavated to a depth of 1.1m at which point the water table was encountered and excavation ceased. Several episodes of infilling were noted, often disturbed by animal burrowing, and a leaf-shaped arrowhead made from Bullhead flint (ON 2161) and fragments of a triangular fired clay object were recovered (ON 869).

Immediately south of the waterhole a small circular pit (176140) was cut through Bronze Age trackway ditch 170110 and contained the skeleton of a neonate, which had been partially covered by a horse skull. The pit could only be dated as Iron Age.

Grave catalogue

Grave 176140 (Burial 1761412)

Not illus

Grave: Sub-circular with steep sides to flat base – 0.55 x 0.50m, 0.17m deep. Fill a mid-grey brown silty loam with frequent chalk and occasional charcoal flecks.

Human Remains: Burial is flexed on the right side, skull to north-west. *c* 88% skeletal recovery. Neonate 2–8 wks.

Around 30m to the south-west of roundhouse 169003, a smaller possible roundhouse was located. The structure (190502) only had a diameter of 6m, certainly towards the lower end of the size range of similar recorded structures, and consisted of a fairly tight cluster of 13 postholes. A gap within the arc of postholes was present on the southern side and could indicate the position of the entrance. A few metres to the south a fence line (170196), orientated WNW–ESE, consisted of six widely-spaced postholes which were generally shallow and had an average diameter of around 0.75m.

The fence formed a boundary between roundhouse 190502, and roundhouse 190499 to the south, which had a diameter of 10m and consisted of nine shallow postholes, with no evidence remaining for any internal divisions, or the location of the entrance. A few metres to the west a possible well (303217) cut ditch 249101, which had formed the north-eastern side of the earlier droveway. The well was sub-rectangular measuring 2.2m by 2m; it was excavated to a depth of 1.2m, but contained no finds, and the fills were indicative of rapid deliberate infilling. The possible well, which was cut by an early Roman ditch, is only tentatively included within this phase, and could fit equally well into the later Iron Age phases. A short length of ditch defined the western edge of the enclosure containing the roundhouse, and continued further to the north as a fence defined by a row of postholes (170193). To the east of the fence line, a ditch (190495) ran parallel, and the gap between them might have formed the entrance into the enclosure.

East of roundhouse 190499, within an open area largely devoid of features of this phase, a post-built fence line (190508) aligned NE–SW was traced for 15m; it turned to the SE at its southern end, and possibly formed part of an enclosure for livestock. An irregularly shaped shallow depression adjacent to the south-eastern end of the fence measured 2.1m by 1.9m and could have been formed through animal trample, perhaps constituting the only remaining evidence for the entrance into the enclosure. The south-western side of this open area was defined by a narrow (2m wide) NW–SE aligned trackway consisting of ditches 170035 and 170036.

Around 20m south of roundhouse 169003 and fenced enclosure 190509 an isolated inhumation burial in grave 297080 had been partially truncated by Middle Roman ditch 297082 (intervention 170139) (see below). A horse skull partially overlay the skeleton, and a Middle Iron Age jar/bowl was found under the legs (Fig 3.29).

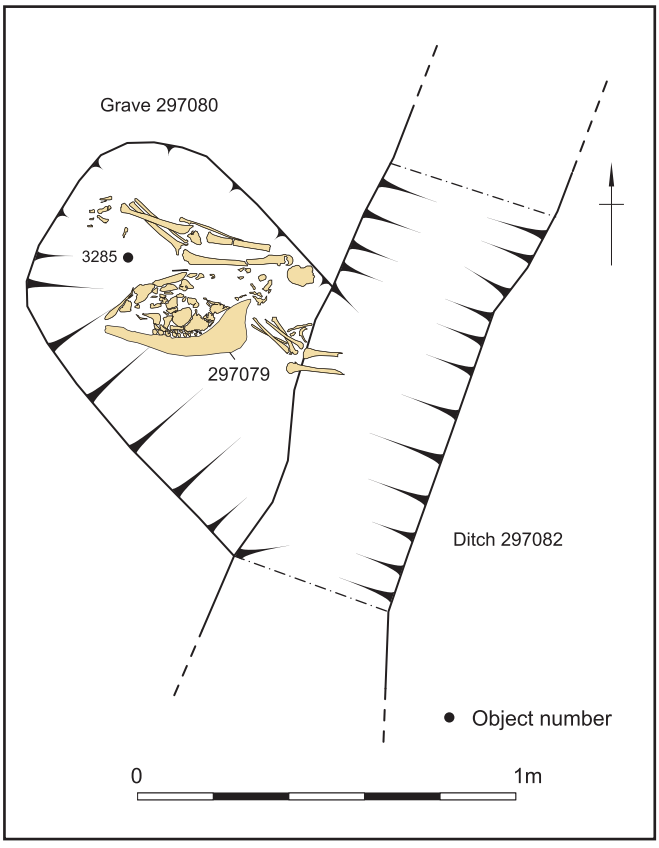


Fig 3.29 Plan of Iron Age grave 297080 (Zone 6)

Grave catalogue

Grave 297080 (Burial 297079)

Fig 3.29

Grave: Sub-rectangular, steep-sided with flat-base (truncated to south-east) – 1.02 x 0.69m, 0.12m deep. Single dark brown silty clay loam fill with occasional flint pebbles and charcoal flecks.

Human Remains: Burial position unclear, legs to north-west and crossed; upper body mostly removed by later truncation. *c* 60% skeletal recovery. Juvenile *c* 7–9 yr.

Grave Goods:

ON 3285: Fine sandy ware with occasional flint, grog and organic inclusions tripartite jar/bowl. Handmade, variably fired and irregularly burnished inside. Base missing. Middle Iron Age. Context 297079, positioned to south of legs.

Horse skull placed to west of legs, partially overlying skeleton.

A cluster of about 20 pits extended to the south of roundhouse 190499, covering an area of around 40m by 20m. The pits generally had steep, or undercutting sides, and averaged between 1.3m and 1.5m wide, with depths of between 0.07m (pit 262089 to the north of the cluster) and 1m (pit 244292), and an average depth of 0.66m. These pits were probably, as with those to the north (see above), used for storage, subsequently being infilled with domestic refuse. Every pit contained pottery and animal bone, and the majority contained burnt flint, from a few fragments to around 6.5kg (pit 291130). Pit 244292 contained fired clay and briquetage indicating salt production (see Poole, below). Marine shell, however, was only present in three of the pits, and then in small quantities. A possible slingshot (ON 3969), half of an unfinished shale bracelet (ON 3968) and a fragment of greensand rotary quern (ON 3971) were recovered from pit 291130. A further fragment of shale was recovered from pit 274065, and a bone point (ON 2987) and two disarticulated canine bacula (bony supports in the penis) which may originally have been retained for a ritual purpose, were recovered from pit 302077. Pit 288151 contained, in addition to pottery sherds, fragments of a weaving comb

made from a cattle scapula (ON 4199), and polished through prolonged use. Fragments of a triangular fired clay weight or pedestal (ON 4028) were recovered from pit 137222. Pottery sherds from the upper and lower fills from both pits 137222 and 219095 could be refitted, suggesting that the pits were infilled rapidly, perhaps in a single event.

Human bone was recovered from pit 173275 in the form of a fragment of a juvenile's jaw bone and part of an adult's (possibly female) skull. This pit also contained mineralised remains possibly from a byre. Around 2m to the north of roundhouse 190471 was a small pit, 258230, that contained fragments of human skull. These are likely to have belonged to a subadult/adult (*c* 15–30 years old), possibly female, and exhibited unhealed blunt weapon trauma – a depressed fracture of the right parietal bone (Pl 3.15; see also McKinley, Vol 2, Chap 13). Sherds from a single Middle Iron Age carinated jar or bowl were recovered from above the skull, and the vessel, perhaps complete when deposited, was probably deliberately buried within the feature.

The group of pits was divided by another trackway, which followed a similar route to that defined by ditches 249096 and 249097 of the previous phase, and was partly redefined by recuts 125213 and 249116, which with curvilinear ditch 249166 to the north-east may have defined an access to the south-east. A small curvilinear ditch to the south (170171) may have bounded the area to the west occupied by roundhouse 190471. This structure consisted of ten postholes and had a diameter of 12m, with those postholes assumed to have formed the southernmost section of the structure absent. The roundhouse was sited in an enclosure, the eastern and southern sides defined by ditch 170170, and which with ditch 170066, formed a NE–SW orientated trackway along the enclosure's eastern side. Ditch 170102, on a WNW–ESE alignment, formed an internal subdivision within the enclosure, but the majority of this had been removed by ditch 170101 (a recut) on the same alignment. Ditch 170102 separated roundhouse 190471 to the north from a smaller probable roundhouse (320043) situated within the southern end of the enclosure. Only eight postholes were recognised as belonging to 320043, which had been bisected by later ditches, and the structure had an estimated diameter of about 7m.

Pl 3.15 Unhealed, depressed fracture of the right parietal bone; from pit 258230 (Iron Age; Zone 6)

A further group of six pits were clustered around the two roundhouses, and these were similar in size and depth to their counterparts to the north, although slightly larger and deeper, but this is likely to be a function of differential truncation, the southerly group having been initially sealed by dark earth layer 170028. The contents of the pits were also similar; all contained pottery and animal bone, and most contained burnt flint. Pit 279145 contained an unusual deposit comprising the bases of four Middle Iron Age pots, and another fragment of fired clay object, as well as over 17kg of animal bones, mainly from cattle, but also including a horse's head, and many of which exhibited butchery marks, perhaps the evidence of feasting.

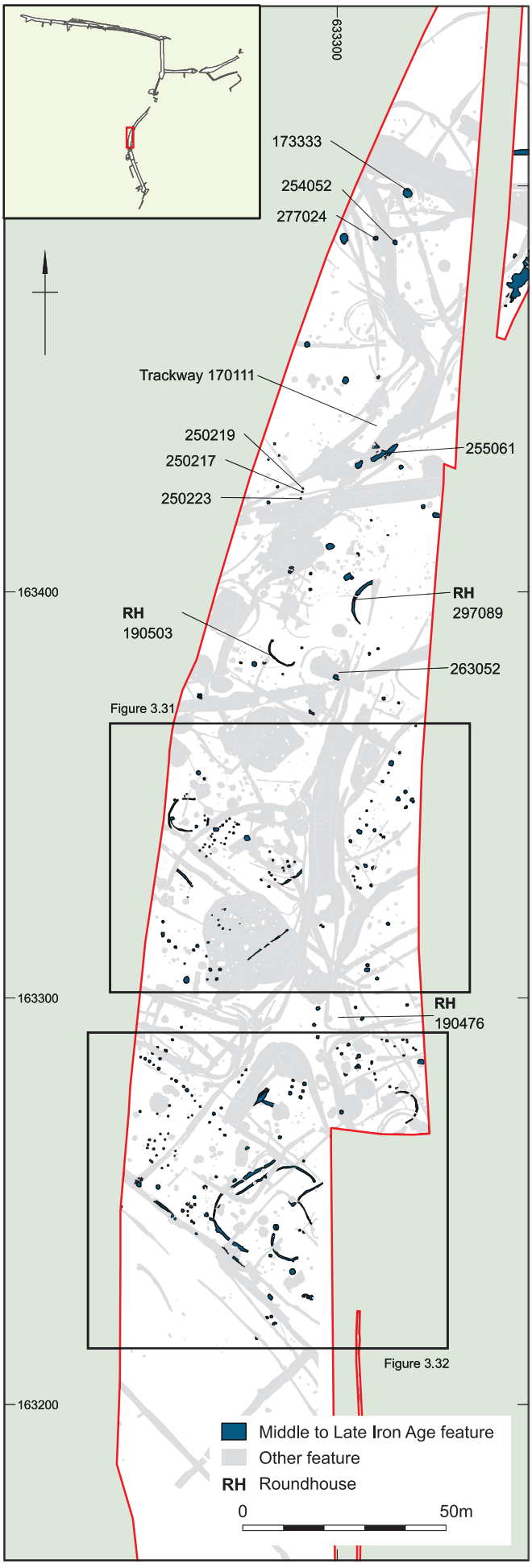
Towards the south of the zone roundhouse 169010, measured 15m across, and consisted of nine surviving postholes. Again no evidence for any internal division remained, but gaps in the postholes to the east and north-east could be indicative of the building's entrance. Around 10m to the west a north-south aligned row of postholes (190479) may represent a fence line enclosing the area occupied by the roundhouse on this side.

On the lower slopes of Ebbsfleet Hill boundary ditch 194033 was recut (as ditch 194044) and followed the same NE–SW alignment as its predecessor, forming the likely the southern limit of the settlement during this phase.

Middle to Late Iron Age

This phase of settlement is defined in the main by features which contained pottery of Middle to Late Iron Age and, to a lesser extent, Late Iron Age date, and the evidence consists largely of post-built roundhouses (Fig 3.30). However, some of these roundhouses are for the first time wholly or partly represented only by curvilinear drip gullies, and this phase may see the transition between two construction techniques. Smaller roundhouses which may not have been dwellings could have been paired with the larger buildings and served as storage structures, or fulfilled other ancillary functions. The trackways of the previous phase were not apparently redefined in this phase, but may have continued in use, and there is evidence for the partial re-surfacing of metalled surface 170111. Four-post structures also appear for the first time, apparently replacing the storage pits of the previous phase. A new southern boundary to the settlement was established on an alignment that was to continue through the Roman period (Pl 3.16), and indeed was still present, coincidentally or otherwise, on a similar alignment in the 19th century when the first edition Ordnance Survey map was published.

North of trackway 170111 little changed from the previous phase, although ditch 302122 had probably



Pl 3.16 Iron Age settlement boundary ditch 300012/3, and later ditch 170178 (Zone 6; view from south-east)

filled up and any related bank disappeared, as evidenced by pits 277024 and 254052, one to either side of the former ditch (Fig 3.30). Unlike the storage pits of the previous phase these, and pit 173333 to the north, had concave bases and less steep sides possibly reflecting a different primary function, prior to their infilling with refuse. To the south of the pits, and immediately north of trackway 170111, three postholes (250219, 250217 and 250223) were aligned roughly north-south and may be the remains of a fence line, perhaps part of a larger enclosure. On an area of trackway 170111 (255061) where the metalled surface was more patchy, a few sherds of pottery of Middle or Late Iron Age date may indicate an episode of consolidation of the surface.

To the south of trackway 170111 were two roundhouses, 297089 and 190503, situated approximately 20m apart. Both structures were represented by partial ring-gullies, and in the case of 190503 also by a single posthole. The larger, northern house, 297089, had a projected diameter of 15m, and consisted of two gullies up to 0.5m wide and 0.18m deep, an inner gully truncated by an outer gully which appears to represent an episode of rebuilding, or re-roofing. Roundhouse 190503 was smaller, with a projected diameter of only 8m, and the gully that defined the southern half of the building only survived to a depth of 0.12m. A single posthole to the north-east may indicate the northern edge was post-built.

To the east of roundhouse 190503 was a well, 263052, which could have been associated with this or the subsequent Late Iron Age/early Roman phase. Well 263052 had a diameter of 1.25m and a depth of at least 1.5m. A partial human skeleton (263050) was present in the upper fill, but the bones were mostly disarticulated and the presence of canid gnaw marks on the pelvic area suggests that they were redeposited.

Grave catalogue
Burial 263050
Not illus
Grave: Disarticulated skeleton deposited in the upper fill of well 263052.
Human Remains: c 28% skeletal recovery. Adult *c* 40–55 yr. ?Female

Fig 3.30 Plan of Middle–Late Iron Age features in Zone 6 and southern end of Zone 7

To the south of the well and roundhouses was an area measuring around 40m (west–east) by 30m (north–south) that appeared to have remained open, perhaps used for grazing, but with no evidence of a boundary, and an absence of structures, pits and postholes containing pottery of this phase (Fig 3.30). In the subsequent phase the area was occupied by a trackway defined by ditches, and a trackway may also have existed in this phase but, if so, the route was not formalised in the same way.

To the east of the open area, the fenced enclosure of the previous phase (190508) was replaced with a similar structure (190507), situated a few metres to the south-west (Fig 3.31). Within the enclosure was a four-post structure (170914), broadly parallel to the fence line. The postholes were around 2m apart, and three were replaced at some time, evidence that the structure was probably in use over an extended period.

Towards the northern end of fenced enclosure 190507, and slightly to the west, was an inhumation burial (292076), deposited near the base of sub-circular pit 292075. The remains had been subject to post-mortem manipulation including possible peri-mortem decapitation and the right upper limb and left leg may have been removed after the individual had been deposited in the pit. (see Vol 2, McKinley, Chap 13). The upper pit fill contained several sherds of pottery of Middle or Late Iron Age date, but these were fairly worn and may be residual.

Grave catalogue

Grave 292075 (Burial 292076)

Not illus

Grave: Sub-circular, steep-sided, flat-based pit, 1.28 x 1.27m, 0.63m deep. Primary fill of mid-light brownish grey clayey silt. Secondary fill of mid-yellowish brown clayey silt with grey clay and grey-green sand patches, sealing skeleton. Upper fill of dark brown clayey silt with occasional charcoal flecks.

Human Remains: Burial is tightly crouched in south-west side of grave, lying on right side; skull absent. *c* 54% skeletal recovery. Adult *c* 30–40 yr. Male.

Grave goods: two horn cores recovered from the same horizon as the skeletal remains could be associated.

Around 8m south-west of the fenced enclosure post-built roundhouse 190472 had a diameter of 6.5m and consisted of nine postholes, a gap on the eastern side possibly indicating the position of the entrance, although no porch or any internal features were present (Fig 3.31). Further to the west, and bounded on its eastern side by NE–SW orientated ditch 137285, was a post-built structure on a similar orientation to 170194 above. The structure, 249123, measured 8.9m long and 2.8m wide, and the postholes which had an average width of 0.45m, generally survived to a depth of 0.2m.

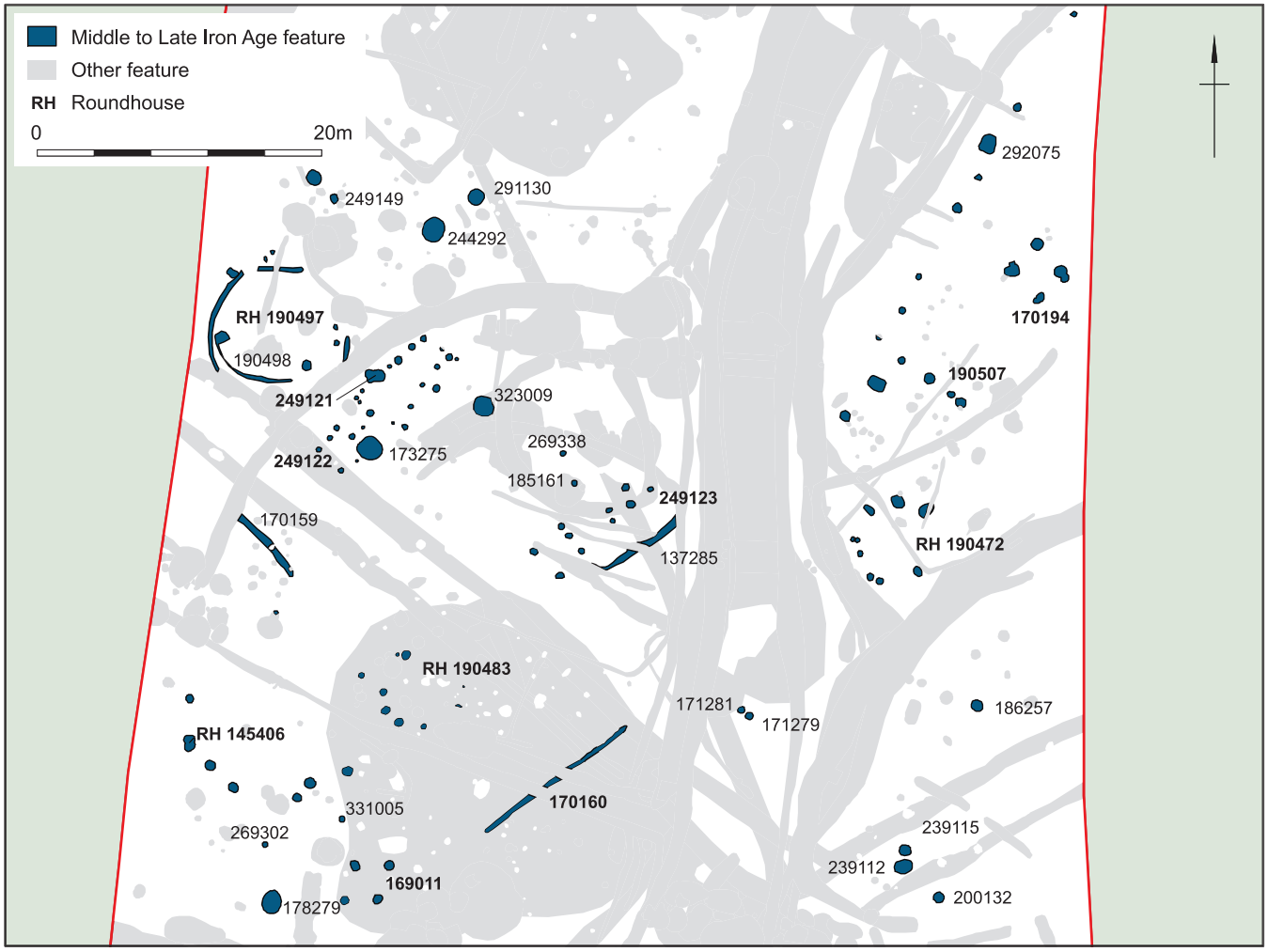


Fig 3.31 Plan of selected Middle–Late Iron Age features in central part of Zone 6

The building may have been divided into two rooms, a longer one to the north-east and a small square room to the south-west, with two internal postholes perhaps forming additional roof supports. The building was almost certainly too small to have been a dwelling and may have been used as a barn, or as a shelter for livestock.

Twelve metres to the north-west a similar, larger building (249121 and 249122) was orientated in the same direction and also comprised two similar elements. The larger, north-eastern part of the structure (249121) was a rectangular room defined by 19 postholes, which had an average diameter of 0.33m and a depth of 0.11–0.38m, two of which may represent repairs to the original structure. The building measured 6.5m long and 3.6m wide, and may have had an entrance porch facing to the south-east, indicated by two postholes in the north-east corner; a row of three postholes within the eastern side of the building may represent additional roof supports. To the south-west structure 249122 was square in form, and was separated from 249121 by a gap of around 2m, although the two are likely to have been part of the same structure. The postholes were generally smaller and shallower than their counterparts to the north. The posts defined an area of around 3m by 2.4m, but the two elements together would have formed a structure 11.4m long and up to 3.4m wide, and likely to have a similar function to 249123 to the east.

Immediately west of structure 249121 two phases of roundhouse were defined by curvilinear gullies (190497 and 190498) which coincided in plan. The earlier of the two, 190498, consisted of a gully which formed the south-western portion of the diameter and seven postholes which completed the arc on the northern and eastern sides, one of which was cut by gully 190497. The roundhouse had an estimated diameter of 8.5m. Roundhouse 190497 consisted of two sections of curvilinear gully, the area between them presumed to have suffered truncation, and it was slightly larger than its predecessor with a diameter of 9.5m. A short length of ditch (170159) lay to the south of the roundhouses and may have been part of the surrounding enclosure; no datable material was recovered. A length of ditch to the south-east (170160) ran at right angles to 170159 and contained a single small plain sherd of Middle to Late Iron Age pottery.

South of ditch 170159 and west of ditch 170160 was a large possible post-built roundhouse (145406). This had a diameter of just over 13m, and partially overlay roundhouse 190471 of the previous phase. A smaller circular post-built structure possibly serving as an ancillary building was located immediately to the north-east. Roundhouse 190483 comprised eight postholes, with a gap in the circuit to the north and had a diameter of 5.3m. To the south was a pit (178279), very similar morphologically to those of the Early or Middle Iron Age, which also contained a similar assemblage of finds – burnt flint, animal bone, and pottery sherds, which although undiagnostic are likely to be of Middle to Late Iron Age date.

East of pit 178279 were four postholes arranged in a square measuring around 2.5m on each side, and interpreted as the remains of a raised storage structure. The postholes (169011), two of which contained fragments of chalk post-packing material, had an average diameter of 0.7m and varied in depth from 0.07m to 0.45m. Two of the postholes contained pottery of Middle or Late Iron Age date. Some 15m to the south-west, a similar, slightly larger four-post structure, 170185, straddled infilled ditch 170170 of the previous phase (Fig 3.32).

Immediately to the south of 170185 there was an L-shaped boundary aligned WNW–ESE (190481 and 190482). Fenceline 190481 was traced for around 23m, and probably continued to the west beyond the limit of excavation, fenceline 190482 measured 21.5m. A gap between the two fences of around 4m seems to have defined an access orientated NE–SW. To the south of this possible access roundhouse 190477 had a diameter of around 8.5m, the perimeter formed of 11 postholes, with others potentially removed by ditches of later Iron Age and Roman date which crossed the south-eastern area of the roundhouse. Five postholes within the western side of the roundhouse may indicate the presence of internal divisions or additional roof supports.

North of the roundhouse three postholes (219110), packed with fragments of chalk, were the surviving elements of a probable four-post structure, the fourth presumed cut away by a sunken-featured building of Middle Roman date (see Chap 4). The structure would have been around 2.5m square, and although none of the postholes contained any finds, their similarity to those forming structure 169011 (above) may indicate that they had a similar function and date.

Towards the south of the zone, and parallel to fence 190481, a row of large postholes (170181) defined the southern limit of the settlement of this phase. The evidence for the fence was fairly fragmentary, as the boundary was continually re-established until the later Roman period (see below), and many of the posts are likely to have suffered truncation. It appeared, however, that the main fence posts, in postholes which measured up to 0.6m in diameter and 0.65m deep, were placed at intervals of around 8.5m, with the gaps between perhaps occupied by smaller posts within shallower settings. The fence, which curved slightly to the south at its south-eastern end, was situated at the base of the slope of Ebbsfleet Hill.

Fence 190480 aligned NE–SW defined the eastern edge of the enclosure containing roundhouse 190477 and the western edge of an enclosure that contained a smaller roundhouse, 190478. Fence 190480 was traced for 14m and may have joined the eastern end of fence 190482. Directly to the south-east of the fence was post-built roundhouse 190478, which with a diameter of less than 6m seems rather small to have been a dwelling and may have been used for storage or some other domestic function.

A ditched enclosure was located to the east of roundhouse 190478 and was partly defined by curvilinear ditch 190451, the southern part of which

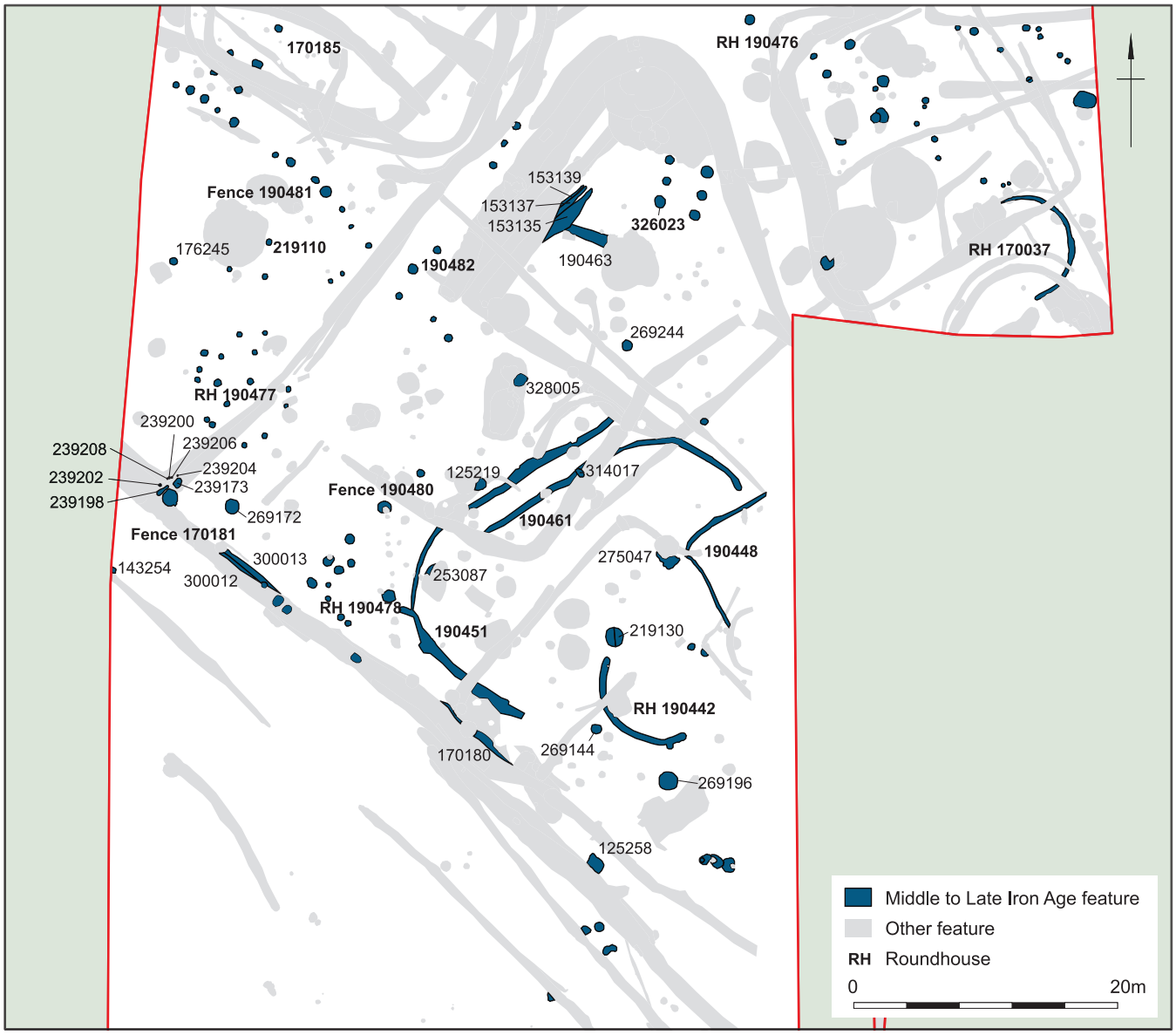


Fig 3.32 Plan of selected Middle–Late Iron Age features in southern part of Zone 6

was parallel to the southern boundary fence (170181), its western end curving round to the north-east. A few metres to the east a parallel ditch (190461) curved further to the east, defining the northern limit of the enclosure, and the gap between the ditches forming a trackway. At the eastern end of ditch 190461 an L-shaped ditch (190448) formed another subdivision of the enclosure, the majority of this area lying beyond the eastern limit of the excavation (Fig 3.32).

Within the enclosure formed by ditches 190451 and 190461 a roundhouse (190442) was defined by a curvilinear gully to the south and postholes to the north, similar in form to 190503 and 190497 (see above). The building had a projected diameter of 8.7m, smaller than roundhouse 169010 which had occupied the area in the previous phase. To the south of the roundhouse a few pits, generally shallow and with rounded bases, contained burnt flint, small fragments of fired clay and sherds of pottery.

A six-post structure (326023) was orientated NNE–SSW, was situated around 15m to the north of ditch 190461. The area defined by posts measured 3.4m long by 2.9m wide and is likely to represent another example of a raised storage structure. A few metres to the north-east a large post-built roundhouse (190476, see Fig 3.30) had a diameter of 11.8m, and had been heavily truncated, especially to the south, by a series of early and middle Roman ditches. A few shallow pits located to the south and north-east of the roundhouse contained a mixture of burnt flint, animal bone, fired clay fragments and pottery of Middle or Late Iron Age date. To the south-east, adjacent to the limit of excavation, a curvilinear gully formed the eastern side of another probable roundhouse, 170037, with a diameter of 7.8m.

Late Iron Age

The features which comprise this phase contained pottery of Late Iron Age or (in some cases) early Roman date, but form a coherent group relating to the establishment of a series of new enclosures defined by ditches, some of which contained roundhouses defined by gullies (see Fig 3.33). For the most part, the

principal feature alignments established earlier in the Iron Age were retained, but the means of definition of the enclosures, trackways and structures changed. The long-established route of the earlier metalled trackway (170111) was redefined to the north of its original location, and the metalled surface is likely to have gone out of use, although sections of it may have been reused as working areas. A wide, new, north–south aligned track was established towards the centre of the zone, which would be further refined within the subsequent Roman period. This phase is likely to have had a fair degree of longevity, as evidenced by the redefinition of many of the ditches that form the enclosures. This phase is also marked by a reduction in the number of pits, but an apparent increase in the quantities of domestic waste recovered from the fills of the ditches. Towards the end of the phase a large ditch, defensive in nature, bisected the northernmost of the ditched enclosures.

At the northern end of the zone a sub-rectangular enclosure measuring around 42m by 39m was bounded to the south-west and south-east by ditch 170090, which probably continued beneath Ebbsfleet Lane into Zone 7 (where it was represented by ditch 262181) (Fig 3.33). The north-western edge of the enclosure was formed by ditch 170039, and ditch 262243 formed the north-eastern side; a gap between the terminals of these two ditches measured 8.4m, possibly a wide entrance into the enclosure to the south.

Within the enclosure, and aligned with the boundary ditches, a four-post structure (319054) measured 3m square, and the postholes averaged 0.85m diameter and 0.18m deep, although the south-western posthole was the largest, perhaps because it had been dug into the softer ground infilling Late Bronze Age ditch 170084. Two small intercutting pits containing domestic refuse were located to the north of the four-post structure, and were the only other features likely to be associated with the enclosure.

To the south of ditch 170090, and aligned on it, L-shaped ditch 170088 defined an area to the south-west, a 3.8m wide gap between the two ditches forming a trackway which continued to the south-west in a slightly narrower form. Here, the south-eastern edge was formed by ditch 252252, which continued further to the north-east as 182375, the whole forming a T shape. Ditch 170088 cut ditch 263033 at its south-western limit, which possibly represented an earlier form of the enclosure. Ditch 170088 terminated to the north-west, leaving a wide gap, perhaps an access point, between this and the assumed location of the southern part of ditch 170039, beyond the limit of excavation to the west.

Within the northern part of the enclosed area a circular gully (169004) 0.5m wide and 0.26m deep, and with a diameter of 8.5m, presumably defined a structure, with a south-east-facing entrance (2m wide).

Ditch 170088 was recut by ditch 170046 (not illustrated), which followed the same 'L' shaped form, but did not extend as far to the south-west. At its north-western end the ditch continued after a gap of 4m as ditch 170095, the western side of this new, narrower entrance marked by two postholes (including 258025). A short length of slightly curving undated ditch (252256) formed a small rectangular subdivision within the south-east of the enclosed area. To the north, roundhouse 169004 was replaced by 170086 (Pl 3.17), an incomplete circular gully that cut former boundary ditch 170088; gully 170086 had a slightly wider and shallower profile than 169004, and a larger diameter of 9.5m. At the projected south-eastern point of the roundhouse, a post-built structure (169005) measuring 2.6m by 2.2m may represent a porch covering the entrance to the roundhouse. However, the postholes contained only a few sherds which could not be dated beyond a generic Iron Age date, and as such the structure could be unrelated, perhaps being a raised storage structure of an earlier Iron Age phase.

At the south-western end of former trackway 170111, one of the larger roundhouses of this phase extended partially beyond the western limit of excavation (Fig 3.33b, 170127). Its location, sited to block the former track, seems unlikely to have been accidental. Roundhouse 170127 had a diameter of 12.6m, and the associated gully a maximum width of 0.78m and remaining depth of 0.37m, although the feature was shallower to the east, presumably as a result of truncation. No internal features were observed, mainly due to later activity. The roundhouse lay within an enclosure defined to the east by ditch segments 170123 and

Pl 3.17 Zone 6 at an early stage of excavation; Late Iron Age ditch 170082 crossing from east to west in the foreground and Iron Age ring gullies 169004 and 170086 beyond (view from north)

Fig 3.33 Plan of Late Iron Age features in Zone 6 and southern part of Zone 7

190517, which ran in a NNE–SSW direction, and to the south by parallel WNW–ESE aligned ditches 247111 and 190489. The latter two ditches may have defined part of a trackway measuring approximately 4m wide. To the south of roundhouse 170127 a pit (160376) contained domestic refuse, as did a grave-shaped feature (164146) which measured 2.2m long, 1m wide and 0.4m deep, but which contained no human bone. A few metres to the south-west a pit (218245) containing the complete skeleton of a young pig (but no other finds) had narrowly survived truncation by a sequence of features of early Roman date.

To the east of the boundary marked by ditches 170123 and 190517 was a further enclosure, the eastern side of which was formed by NNE–SSW aligned ditch 170137, which continued further to the south, and was a recut of ditch 170138. Only a short length of ditch 170138 survived, although a short segment of ditch found beneath later Roman ditches may indicate that this ditch extended further to the east than 170137, its replacement. The southern side of the enclosure was represented by ditch 190512, which terminated 3m short of ditch 170137, the gap between the two forming an entrance at the south-east corner of the enclosure. Ditch 190512 appeared to peter out to the west, but if projected in this direction then it would have met the southern terminal of ditch 190517. Ditch 190512 truncated a short length of similarly aligned ditch (246230, not illustrated), a potential precursor.

Within the enclosure were two roundhouses, 170126 and 190505. The western building, 170126, was defined by an incomplete gully, the eastern part presumably truncated, and had a diameter of 7.5m. This was constructed adjacent to ditch 170123, indeed close enough so that the western part of the building's wall may have formed part of the boundary. The second roundhouse (190505) was sited on the eastern side of the enclosure, also adjacent to a boundary (170137), and perhaps close enough to suggest that any bank related to 170137 would have been located on the east side of the ditch. Roundhouse 190505 had a diameter of 10.5m, and two postholes were located within a narrow gap in the gully.

Around 8.5m north of roundhouse 170126, a large pit (327024) measured nearly 3m across and had a maximum depth of 0.52m. The function of the pit is unclear, but it may have been dug to extract clay for the manufacture of daub. The lower fill of the pit had resulted from the collapse of the feature's sides, the upper fill was a mixed deposit containing a few pottery sherds and fragments of animal bone and was indicative of deliberate and rapid infilling. Three metres west of the pit was a small, ovoid-shaped oven (297095). The oven measured 1.32m long and 0.68m wide, and had a steep-sided, flat-based profile 0.2m deep. The lower fill was a black charcoal-rich clay, the underlying natural scorched red, especially at the southern end of the feature. The upper fill was a dark brown silty clay which contained fragments of chalk, and may represent the remains of an episode of consolidation after the oven went out of use. A few small pits and postholes were present to the north of oven 297095, but there was no clear northern boundary to the enclosure.

Approximately 30m south of roundhouses 170126, 170127 and 190505, and separated from them by several ditches (eg, 190489 and 190512), was roundhouse 190496. This was represented by shallow, truncated segments of gully on the south and west sides with several postholes in the gaps between the segments. The building had a diameter of 11m, with a roughly concentric arrangement of smaller internal postholes probably for additional roof supports. Ditch 299082 to the east of roundhouse 190496 probably belongs to this phase, and represents a subdivision of the enclosure.

Around 15m to the south-east of roundhouse 190496 a U-shaped ditch (249098) formed a small enclosure, possibly for stock, which was open on its western side. Ditch, 249098 was steep-sided with an average width of 0.2m and a depth of 0.18m. Ditch 249162 extended to the south-west and formed an inverted T shape.

To the west of ditch 249098 a cluster of postholes (249119) are likely to represent a small building, the main axis of which was orientated N–S, and which measured 4.6m by 2.3m. The building was formed by five postholes on each side, and a central post at the northern end. Within the structure were an additional two postholes. The building may have functioned as a small barn or storage area. A pierced oval lead object (ON 3232) was recovered from the fill of one of the postholes, and may have been a weight, and two similar objects were recovered from the vicinity during metal detecting. Within the enclosure it was noticeable that only a single pit (323015) has been assigned to this phase, and this contained only a few sherds of pottery.

On the east side of this part of the site, to the north-east of enclosure ditch 170137, was ditch 190515. This L-shaped ditch defined an enclosure, the majority of which lay to the east beyond the limit of excavation. The southern part of a circular gully (123297) lay between ditches 170137 and 195015. This possible roundhouse was considerably smaller with a diameter of only 5.7m than those to the west, and may not have been a dwelling. No finds were recovered from the gully.

A further sub-rectangular enclosure was defined by ditches 170143 and 264143. The possible entrance may be suggested by the ditch terminal, although as this is close to the limit of the excavation it is uncertain. This enclosure measured 20m NW–SE by at least 35m NE–SW. Ditch 170143 was replaced by 170144, which followed a similar alignment, but lay just east of 170143, and may also have returned to the east, as ditch 170197, slightly further to the south than its predecessor. The re-established enclosure was subdivided by NE–SW ditch 170155. With the exception of two pits, and a cluster of postholes in the western side, the enclosure was devoid of features of this phase.

Between enclosure ditches 170143 to the east and 170138 to the west, and their replacements 170144 and 170137, was a droveway that narrowed in width from approximately 15m in the north to 10m towards the south as the ditches converged. This droveway led into what appears to have been an open area.

The droveway apparently continued further to the south beyond the open area, bending slightly to the south-west and narrowing to 7m wide between an L-shaped boundary to the east defined by ditches 190464 and 190465 (see below) and another similarly aligned, rectangular enclosure to the west (Fig 3.33c). This rectangular enclosure was defined by ditch 190453 on the east side and ditches 225050, 190469 and 170104 to the north. Between them the ditches on the north side created a staggered entrance into the enclosure, perhaps part of a system of livestock control. Ditch 170104 formed the inner ditch on the north side, and was recut by ditch 170103, whilst ditch 190469 formed the outer ditch, recut as ditch 190453, both continuing to the south-west for approximately 30m. This eastern boundary continued after a gap of 2.2m, presumably a small entrance, and further south was defined by ditch 190455, forming the southern boundary of the settlement. Ditch 190455 appears to have replaced ditch 190459, part of which survived to the north-west along the southern settlement boundary, and this in turn is likely to have replaced the fenced boundary of the previous phase. The enclosure, measuring approximately 40m by at least 30m, continuing to the west beyond the limit of excavation, was devoid of any contemporary features, which may support an interpretation as a livestock enclosure.

To the east of the droveway at the southern end was a further group of enclosures, as well as the remains of two probable roundhouses, whilst some the N–S aligned ditches recorded to the east during the 2005 pipeline investigation (Egging Dinwiddy and Schuster 2009, fig 2.18) may relate to these enclosures.

Ditches 190464 and 190465 formed an L-shaped boundary, a recut of an earlier but similar ditch. Both stopped at ditch 190456 to the east, aligned NE–SW, with 190455 possibly forming a further element of this boundary. Ditches 190455 and 190456 were slightly offset from one another creating a staggered entrance which measured 2.6m wide. A shallow L-shaped gully (170174) approximately 20m long immediately to the west of the entrance may represent a slightly later modification to the arrangement in this area. Adjacent to the southern terminal of ditch 190445, which stopped around 6m short of the projected line of southern boundary ditch 190455 (largely truncated by later ditches in this area), was a large sub-circular pit (223055). Pit 223055 measured 1.65m across, was 0.4m deep and contained a small quantity of animal bone and a moderate quantity of Middle–Late Iron Age and 1st century AD pottery.

Ditch 190445 turned to the south-east at its northern end, kinking slightly to the north just prior to terminating. To the east ditch 190436 formed an L-shaped boundary around a probable roundhouse or ancillary structure (172283) represented by a curvilinear gully. This possible roundhouse had a projected diameter of around 5.2m, which would make this a relatively small example.

Ditch 137299 to the north may have been associated with the enclosure. Immediately to the south of ditch 137299 were two phases of roundhouse, represented by

Pl 3.18 North end of Zone 6, showing complex sequence of features cut by Late Iron Age ditch 170082 to left (view from west)

curvilinear gullies, both of which extended to the south, beyond the limits of excavation. The ditches that represented the roundhouses did not coincide at any point so it was not possible to tell which was the earlier. The outer ditch (170031) comprised an arc, terminating to the east, and with a projected diameter of around 12.8m. The inner, smaller ditch was continuous within the excavation area and had a projected diameter of 11.6m. Both these ditches cut an earlier ring gully (190487, not illustrated on Fig 3.33), centred to the north, the eastern side of which survived, with a projected diameter of approximately 8m.

Ditch 170082

Although many of the enclosures within this phase were redefined by the recutting of the boundary ditches, ditch 170082, towards the north of the zone, was unusual in that it bisected the northernmost enclosure, cutting ditch 170039, and was by far the largest ditch present (Fig 3.33.a; Pl 3.18). Ditch 170082 was aligned WNW–ESE and had a remaining width of 4.6m (it had been recut; estimated width approximately 7m) and was 2.2m deep, with moderately steep sides and a fairly flat base (see Fig 4.7; Pl 3.19). The lower fills of the ditch were indicative of gradual silting and contained a few residual pottery sherds of mid- to Late Iron Age date. These fills appeared to have entered the ditch from the southern side, and suggest that there had been an internal bank, although no *in situ* bank deposits survived. The ditch's upper fills appear to have been deliberately deposited in episodes of backfilling, and contained occasional sherds of early Roman date. Other finds included an iron spearhead (ON 3292), a bone handle (ON 3293) and a spindle whorl (ON 671). Any entrance across the ditch may have been situated between Zones 6 and 7, beneath the modern (and now buried but retained) surface of Ebbsfleet Lane. The ditch, which it is suggested below, relates to similar features recorded in 2005 to the west and south (Egging Dinwiddy and Schuster 2009, 105–8), and also to the south within the northern end of Zone 4 and the Weatherlees Pond site (see above), appeared to be a defensive feature.

Pl 3.19 Late Iron Age ditch 170082, and recut 170041 (Zone 6; view from west)

Zones 7 and 8

Early Iron Age

There is little activity of the Early Iron Age evident within Zone 7, and none within Zone 8, despite Perkins' findspots of this date to the east of that area. The isolated pits and ditches to the south of Zone 7 are likely to have been peripheral to the considerable activity of this phase within Zone 6, when metalled trackway 170111 (Fig 3.33a), which continued into Zone 7 (as 262210 and 287046) seems likely to have originated. The trackway within Zone 7 consisted of irregular, often patchy areas of compacted gravels which were consolidated in later phases with the addition of pottery sherds and animal bone fragments.

The pits which contain Early Iron Age material tend to cluster within the area of Late Bronze Age settlement described above, with a few pits to the north-east within an area of later Iron Age settlement (Fig 3.34). Pits 210054, 178091, 270087, 239080, and 278066 were mostly rather amorphous and shallow (between 0.17m and 0.36m deep). All contained small quantities of Early or Middle Iron Age pottery and occasionally fragments of animal bone.

Ditch 201085 towards the south of Zone 7 may have been a late addition to the settlement of Late Bronze Age date (above) or alternatively it may have related to ditch 169001 in the north of Zone 6, perhaps demarcating the northern extent of the settlement of this phase. It is likely to have been associated with parallel ditch 201083 to the south, although neither feature was firmly dated, each containing only a few sherds of pottery. To the north-west, and internal to later roundhouse 201103, two postholes 179124 and 179119 (Fig 3.35) contained Early Iron Age pottery, the latter 67 sherds.

Middle and Late Iron Age

This period is marked by a significant increase in the level of activity within Zone 7 and the southern part of Zone 8 (Fig 3.35). Occupation is represented by a series of enclosures and field systems defined by trackways. Within the fields, structures represented by groups of postholes seem likely to have been related to crop storage.

Zone 7 was bisected by an area of intercutting ditches and trackways, which measured around 35m across at its widest point, aligned NW–SE. This area was a focus of activity from the Bronze Age (see above), with levels of activity increasing in the later Iron Age when a series of wide flat based 'ditches', likely to be trackways or ditches along the sides of trackways, were in use (features 193098, 193099, 159253, 193094, 201131, 301016 and 301040).

Immediately to the north-east was an area of occupation, initially represented by ditch 201169 and then by a curvilinear, possibly horseshoe-shaped enclosure (ditches 159246/201168 and 201145). This was overlain by a rectangular or square ditched enclosure, 201137, which was only partly present within the excavated area, and continued to the east. Enclosure ditch 201137 was up to 2.5m wide and 1.1m deep, being notably deeper to the north where it was partially recut by a short length of ditch 201138.

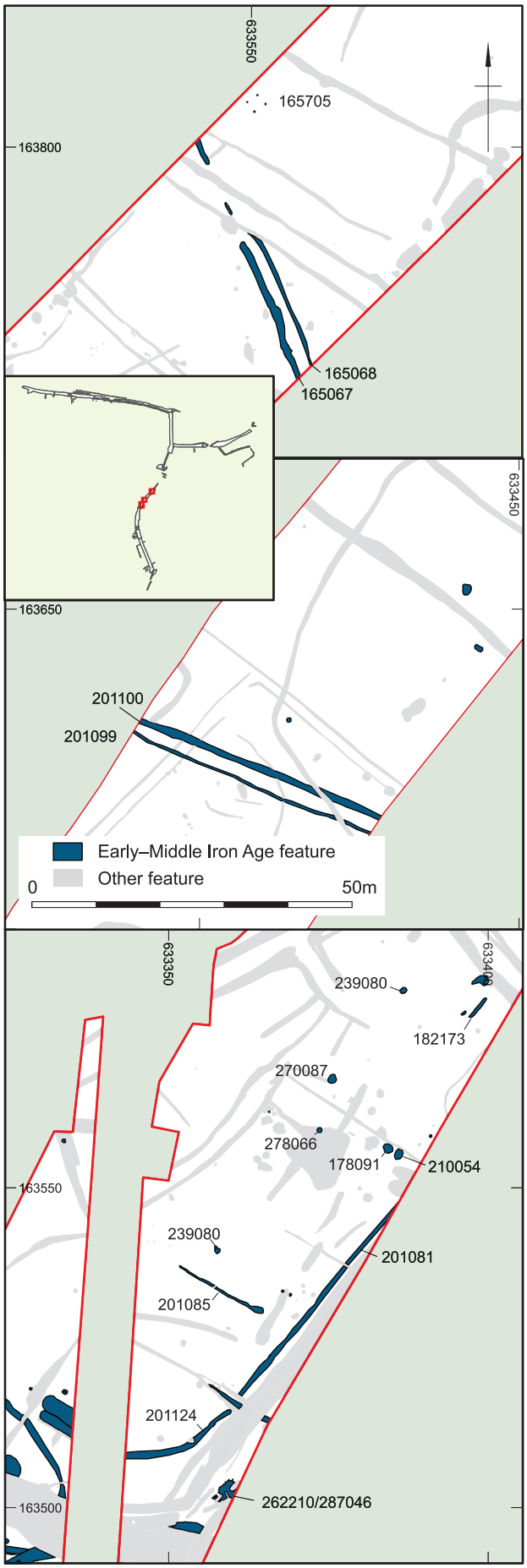


Fig 3.34 Plan of Early–Middle Iron Age features in the of Zone 7

Within the enclosure an area of disturbed soil (201141) 0.12m deep measured 16m by 7.5m, extending to the east beyond the limit of excavation. This layer, possibly formed through animal trample, contained residual pottery of Late Bronze Age and Early Iron Age date, and both struck and burnt flint. Middle Iron Age pottery sherds, and a single Middle–Late Iron Age sherd were also recovered.

Two inhumation burials in graves 136136 and 136139 (see Fig 3.35) were situated side by side, the more southerly (136136) appearing to be truncated by Late Iron Age enclosure ditch 201137, though the grave cut was very shallow and little survived of the burial. Grave 136139 contained three sherds of abraded Early Iron Age pottery, a possible coffin nail and a small copper alloy ring. The attribution of these burials to the present phase is somewhat uncertain, and 136136 may have been rather earlier in date.

Grave catalogue

Grave 136136 (Burial 136137)

Not illus

Grave: NE–SW, sub-rectangular, vertical-sided with flat base (truncated to south-west by ditch 201137) – 1.12 x 0.61m, 0.06m deep. Mid-greyish brown sandy silt fill, occasional charcoal flecks.

Human Remains: Burial position unclear. Only fragmentary long bones remained. Juvenile-subadult >8yr.

Grave 136139 (Burial 136140)

Not illus

Grave: NE–SW, sub-rectangular, vertical-sided with flat base (truncated to north-east by land drain) – 1.78 x 0.62m, 0.11m deep. Mid-greyish brown sandy silt fill, occasional charcoal flecks.

Human Remains: Burial is supine, head to north-east, and legs flexed with knees to west. Very poor survival, <1% skeletal recovery. Adult >30 yr.

Grave goods:

ON 2753: on grave base in area of left arm. Fe object, possible coffin nail?

ON 2754: on grave base behind left tibia. Plain Cu alloy ring.

At the extreme southern end of the zone metalled trackway 262210 of Early Iron Age origin ran in a NE–SW direction, with further patches present to the north-east (287046), where the surface had been renewed by the addition of over 6kg of pottery sherds of Middle or Late Iron Age date, in addition to large amounts of animal bone (Fig 3.34). Ditch 201081 bounded the western edge of the trackway, and continued to the south-west as ditch 201124, which curved to the west beneath Ebbsfleet Lane, and terminated within Zone 6, possibly as ditch 262243 (Fig 3.33). Further to the south, ditch 178381 was parallel to 262243, and terminated just to the west of the metalled trackway, presumably respecting it.

To the north-east, a pair of parallel ditches (201100 and 201099) running WNW–ESE probably defined a further trackway that extended beyond the confines of the excavation both to the west and east. The ditches differed considerably in size with 201100, the northern ditch, up to 1.15m wide and 0.4m deep, and 201099

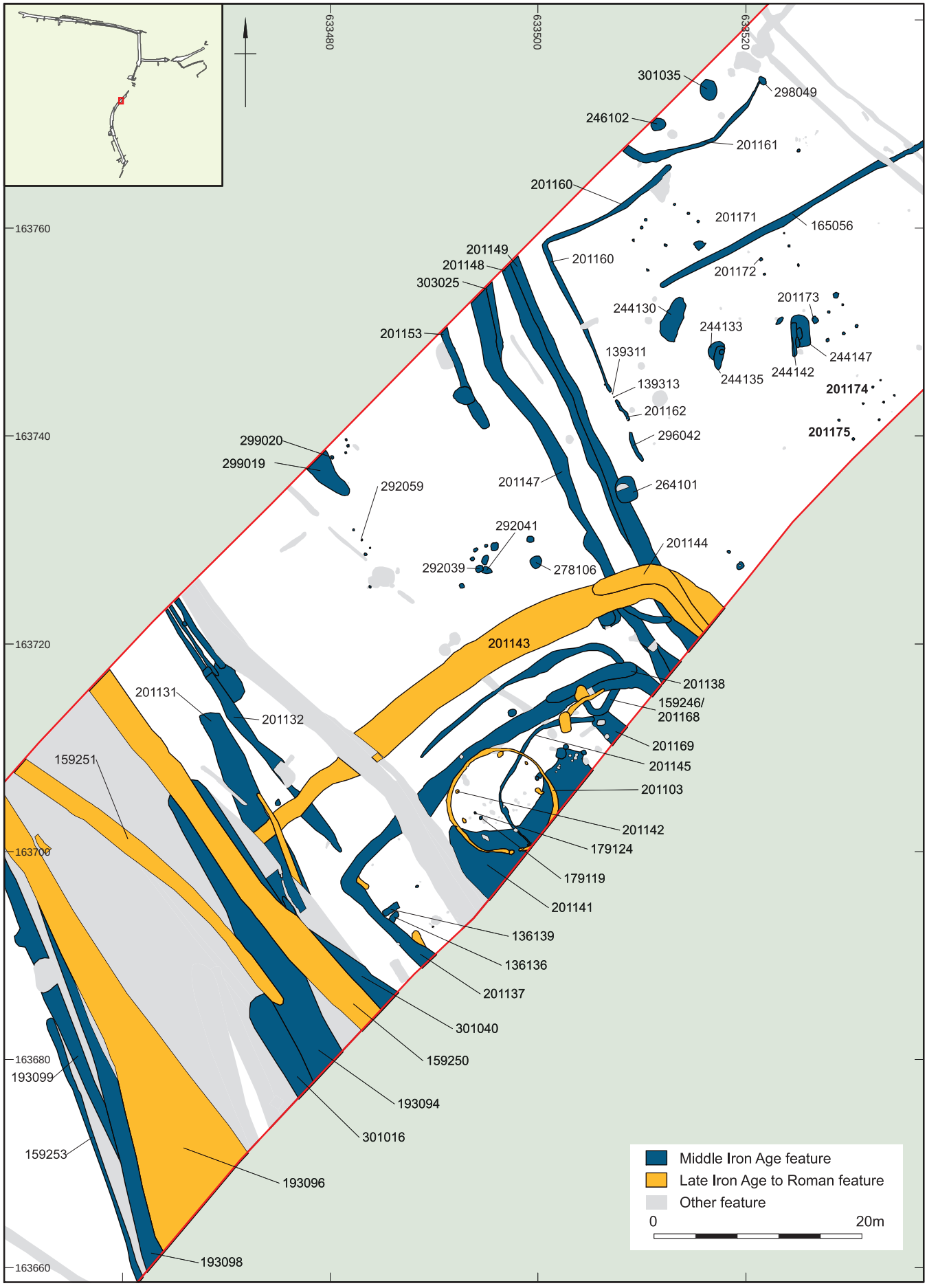


Fig 3.35 Plan of Middle –Late Iron Age features in Zones 7 and 8

only 0.45m wide and up to 0.2m deep. Nevertheless the two ditches remained a consistent distance apart and are likely to have been associated. Two further potential trackways were present towards the northern end of Zone 7 and within the southern end of Zone 8. Both sets of ditches were orientated NW–SE. The southern pair, 201147 (a possible recut of ditch 303025) and 201148 (later recut as 201149), also had a fairly consistent gap between them, of around 2m (Fig 3.35). The northern pair, within Zone 8 contained no datable material and consisted of segmented ditch 165071, 125155 and 165067, and ditch 165068, which did not extend across the whole of the excavated area, and was cut by ditch 165069 of Roman date (Fig 3.34).

The area bounded by these last two sets of ditches was further subdivided by an 'L' shaped ditch 201160, the NW–SE aligned part of which was segmented and continued as ditches 201162 and 296042. Two stakeholes (139311 and 139313) between ditch segments 201162 and 201060 may be indicative of a fence or gateway. Ditch 165056 probably formed a further subdivision, although the latest material recovered from the fills was pottery of Early Iron Age date. To the north-west of 165056, a sub-rectangular structure was represented by eight postholes (201171). To the south-east of the ditch four further post-built structures were present, 201172 (five postholes); 201173 (six postholes); and 201174 and 201175 (each with four postholes) (Fig 3.35). These structures could have been raised grain stores or small barns, and a group of shallow pits (244130, 244133, 244142, 244135 and 244147) may have been used for clay extraction for daub for the structures' walls.

Other features assigned to this phase include a curvilinear ditch (201161) 0.85m wide and 0.68m deep which enclosed an area mostly beyond the limit of excavation to the north-west. Two large shallow pits (301035 and 246102) and a smaller pit (298049) within the enclosure are probably contemporary with it. Ditches 201153, 299019 and 201132 are probable field boundaries and are all aligned NW–SE and terminate within the confines of the site. A cluster of pits to the west of trackway ditch 201147 (see above) are likely to belong within this phase, although only features 278106, 292039 and 292041 contained any datable material. The others are considered to belong to this phase group as they are closely associated spatially. Posthole groups 165075, 299020 and 292059, although undated, are also tentatively included within this phase. Other pits and occasional postholes contain varying amounts of Middle to Late Iron Age pottery, but these did not form coherent groups, and are spread throughout Zone 7, with a single example to the northern end of Zone 8 (165031).

Zones 9, 10 and 11

Early Iron Age

The evidence for activity during the Early Iron Age in Zones 9, 10 and 11 was fairly sparse (Fig 3.36 and see Fig 3.39). In Zone 10 a series of ditches (249191, 249192 and 249193) which enclosed an area in the south-west part of the zone contained residual Early Iron Age pottery in addition to sherds of Middle or Late Iron Age date (Fig 3.37). Ditch 249193 (see further below, Middle Iron Age) overlay an earlier ditch, 135055, the earliest linear feature within the sequence in this area. Ditch 135055 may have been defensive in function; it was at least 1.1m wide and 1.8m deep and had very steep sides which angled to a narrow concave base which may have held a palisade (see Fig 3.37). No datable finds were recovered from any of the fills, but an Early Iron Age date does not seem unlikely given the presence of residual pottery of this date in the overlying ditches.

Within the bridge abutment trench to the east (Fig 3.37), two curving ditches or gullies were only partly located in the excavated area, and probably represent the drip gullies around roundhouses. The northern example, 196112, had a projected diameter of around 5m, and the gully was 0.29m wide and 0.21m deep with a V-shaped profile. Immediately to the south-west the second example, 196111, only a small portion of which lay within the excavation area. The ditch was up to 0.6m wide and 0.42m deep, and had a more concave profile than its northern counterpart, made irregular through root disturbance. The ditch contained a very mixed pottery assemblage (44 sherds, 298g), the majority of the material being of Roman date, so it is possible that this the feature was considerably later than the date suggested here. The northern roundhouse was cut by a NNE–SSW shallow ditch (196113), which contained three sherds of Early Iron Age date. It seems likely that ditch 196113 and ditch 194080 to the west (which also post-dated 196112) formed a small field or enclosure which did not, however, extend as far as Zone 10 to the west.

In the north-east part of Zone 9 was a sub-oval pit, 197095, measuring 1.25m long, 0.8m wide and with a depth of 0.2m (Fig 3.38). The lower fill (197096) was of redeposited natural clay but with a high charcoal content, the upper fill (197097) was also charcoal rich and contained 17 sherds of Early Iron Age date.

Within Zone 11, a north-south aligned ditch, 190414 (see Fig 3.40), contained 182 sherds of Early or Middle Iron Age date, which were located within a single cluster and perhaps represented the fragmentary remains of two vessels. The ditch, which is likely to have been a field boundary, was 1.4m wide and up to 0.55m deep and was respected by two ditches to the east which seemed to define a trackway, or droveway. These ditches, 190415 and 190405, were traced for up to 70m in a WNW–ESE direction and were separated by a gap of up to 2.7m. Both were undated, although residual Neolithic flint was present within ditch 190415. One of the ditches may have continued further to the south-east where a ditch was noted within the southern extension of Zone 12 (ditch 239027) and contained 209 sherds of a similar date (ie, Early or Middle Iron Age) to those in ditch 190414.

A second trackway was situated around 120m to the west, aligned ENE–WSW, broadening out both to the west and south at its southern end (Fig 3.40). This was

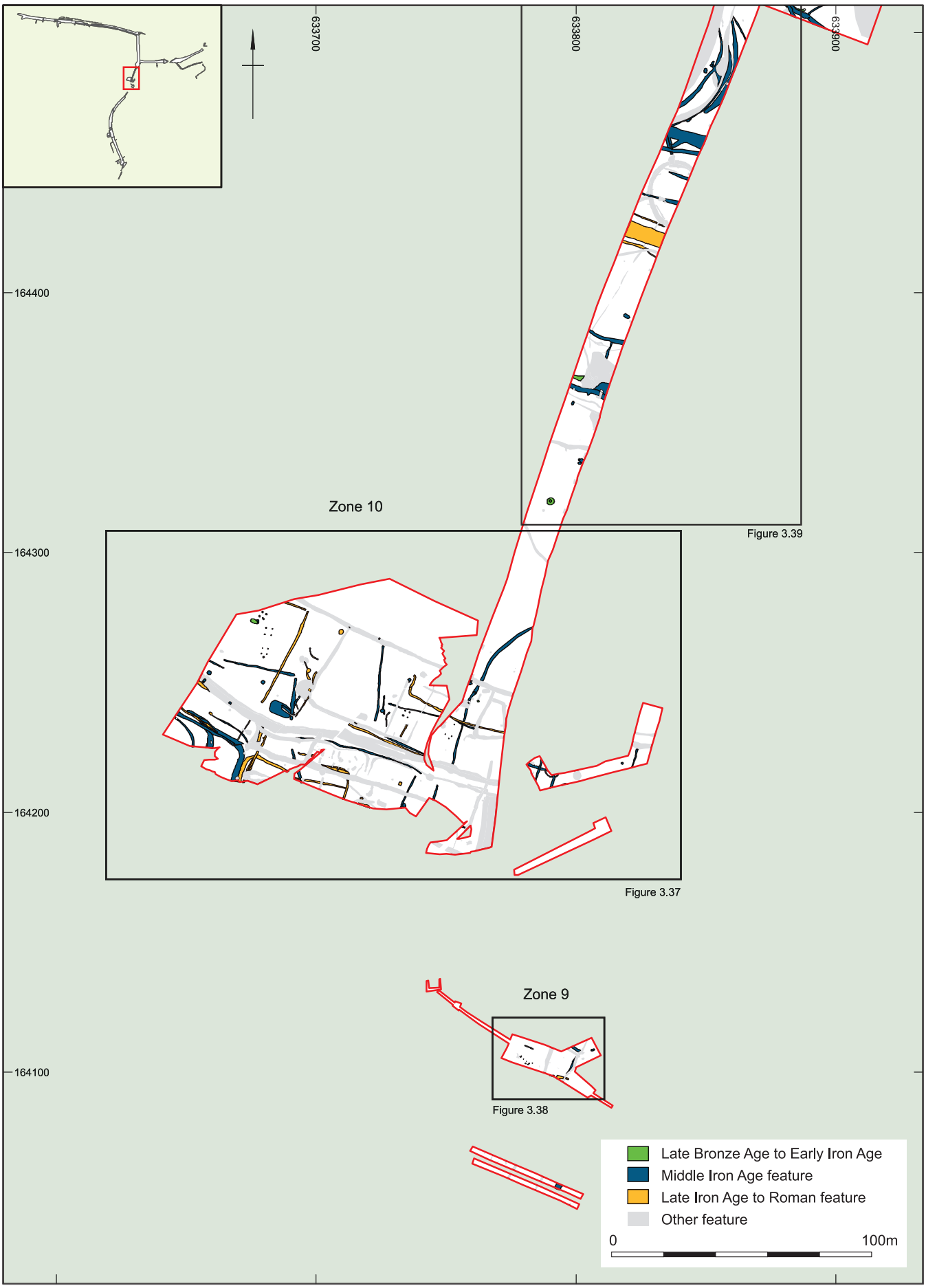


Fig 3.36 Plan of Iron Age features in Zones 9 and 10

also defined by a pair of initially parallel ditches (190401 and 190402/190403), although no datable material was recovered from any of the excavated segments. Other undated ditches, 190411, 190413, 147059, 147061, 208003 and 144030 (Fig 3.40), may represent field boundaries or further segments of trackway in this phase.

To the north of Zone 10 a curvilinear ditch, 194110, was perhaps the earliest of a sequence of many ditches enclosing an area to the west beyond the limit of excavation, and which were continually recut into the Roman

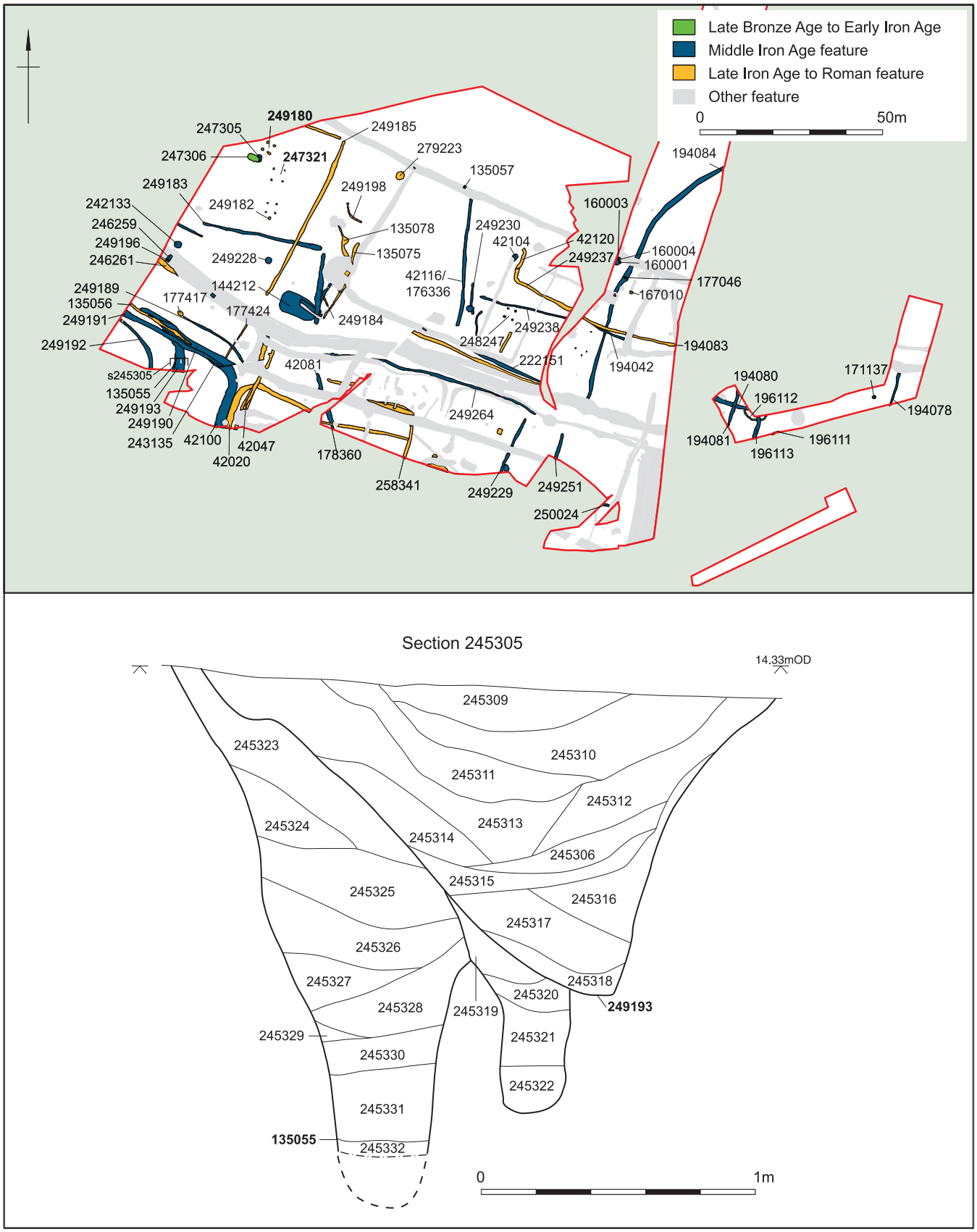


Fig 3.37 Plan and section of Early Iron Age and Middle–Late Iron Age features in southern part of Zone 10

period (Fig 3.39, see also below). The ditch contained two sherds of Early or Middle Iron Age pottery.

Middle–Late Iron Age

As in Zone 7 to the south, the amount of activity within the broad period covering the Middle or Late Iron Age seems to have increased. Even so, very few features contained pottery which can be confidently dated to the Late Iron Age, and even fewer were assigned a secure Middle Iron Age date. In Zone 10a features of this period take the form of a series of enclosures containing occasional pits, and within Zone 10 to the north, where the archaeological features are harder to interpret due to the narrow nature of the excavation area, occasional ditches and pits are also present. In both branches of Zone 11 datable material was often absent, particularly from the ditches.

Within the larger northern area of Zone 9 a short and narrow ditch (135091) may have been a beam-slot, and was broadly parallel with a group of postholes (135092) which lay about 4.5m to the south (Fig 3.38). The potential beam-slot was 3.8m long and up to 0.32m wide with a maximum depth of 0.08m; a sherd of pottery was recovered from it. The postholes (135092) formed a slightly irregular double row, and along with other examples in the vicinity contained no datable material.

In the south-west corner of Zone 10, the enclosure bounded by Early Iron Age ditch 135055 (see above) was initially redefined by ditch 245308 (not shown), which had a similar narrow deep profile, and was then superseded by ditch 249193 which was wider, with a more concave profile, up to 2.1m wide and 1.2m deep (Fig 3.37). During this same broad period the enclosure was expanded in a westerly direction with ditch 249191, later recut by ditch 249190, enclosing an area to the south-west. This was clearly a site of some importance, and potentially the location of a settlement.

To the north, an associated field boundary followed a broadly north-south and west-east alignment and was defined by ditches 249183, 249184, 42081 and 178360, which were considerably less substantial than the enclosure ditches to the south-west. Towards the northern edge of the field, large shallow pits 242133 and 249228 contained pottery sherds and animal bone in addition to quantities of burnt flint, and seem likely to have been used for the disposal of domestic rubbish. A similar sized pit to the north (247305) contained only four pot sherds, also of Middle or Late Iron Age date.

The field system continued to the east with similarly aligned ditches 249238, 249230 and 42116/176336. To the south of ditch 249238 was a four-post structure 248247. Further east a major boundary was represented by a curvilinear ditch (194084). Ditches 249251 and 249229 (Fig 3.37) in the east of Zone 10a, and ditches 194081 and 194078, within the bridge abutment trench, were parallel to the southern stretch of 194084 and probably represent the boundaries of individual fields or smaller enclosures.

This alignment of ditches continued further to the north within Zone 10, represented by ditches 194098,

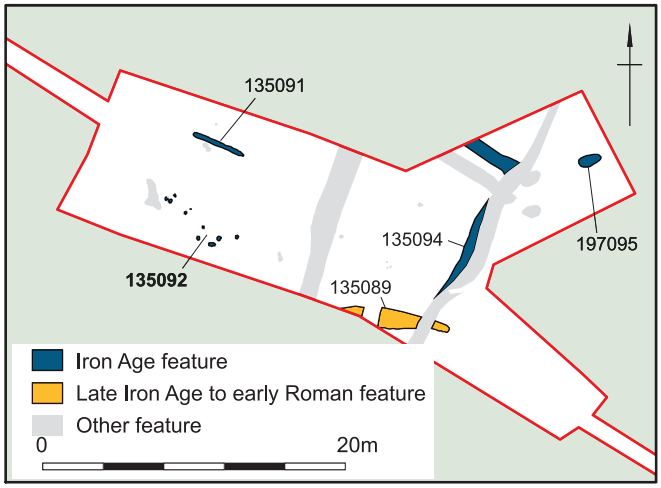


Fig 3.38 Middle–Late Iron Age features in Zone 9

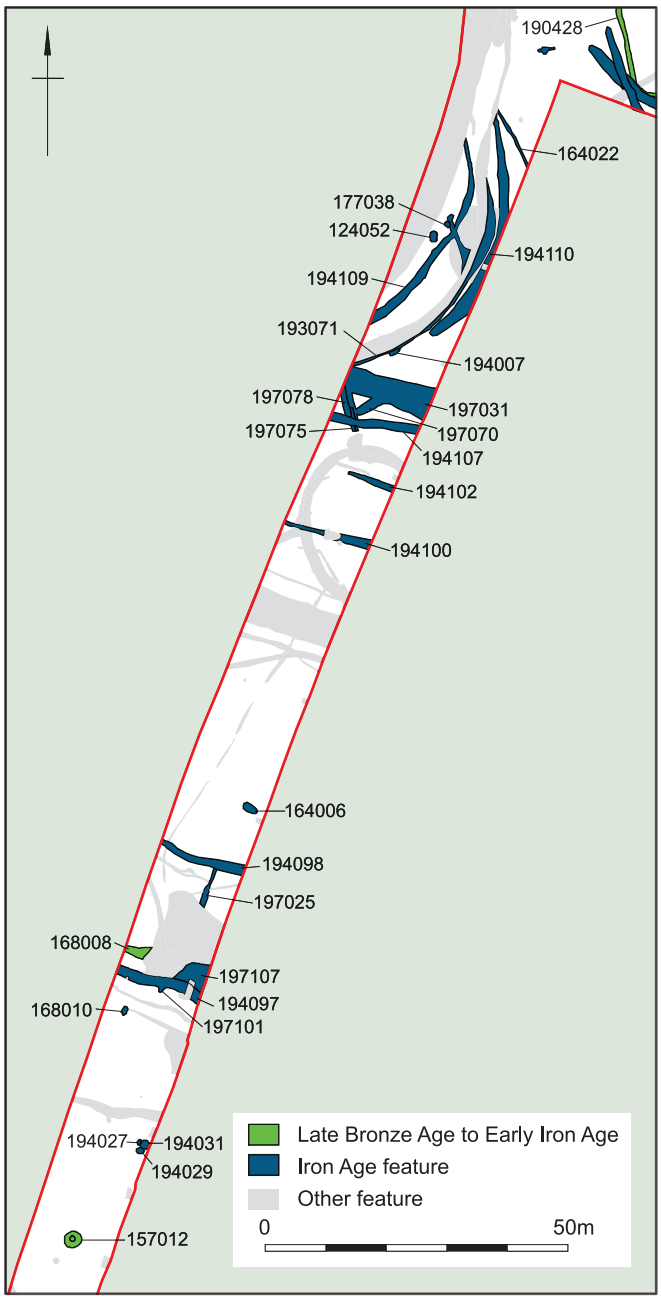


Fig 3.39 Plan of Early Iron Age and Middle–Late Iron Age features in northern part of Zone 10

197025, 194097 and 194107 (Fig 3.39), which were interspersed with occasional small pits (164006, 168010, 194027, 194029 and 194031), and with a major boundary ditch, 197031, at the northern end of the zone. This ditch, which was 4.48m wide and 1.08m deep, may have marked the limit of the field system to the south. Enclosure ditch 194110 (see above), was replaced by ditches 194109 and 193071, although it is unclear which of these was the earlier since 193071 had been recut by a ditch of probable Late Iron Age or early Roman date (194108). Both ditches were fairly shallow but between them contained 83 sherds of pottery.

In the northern part of Zone 11 (Fig 3.40), to the west of a sequence of enclosure ditches of primarily Roman date (see Chap 4), two ditches (171037 and 171038) contained only Middle or Late Iron Age material. However given the amount of recutting of ditches within this area, (where no natural geology was visible on the exposed surface), it is difficult to have a high degree of confidence in the provenance of any of the finds from the upper fills of larger features or from the smaller ditches.

To the north-east, in the area originally occupied by a palaeochannel (see Chap 2), were two isolated four-post structures (169007 and 169008) (Fig 3.40). Fragments of fired clay came from the postholes of structure 169007, whilst the southern group of postholes, 169008, was more irregular in form and contained, in addition to fired clay, small quantities of cremated human bone (probably redeposited pyre debris) in two of the postholes (189050: 17.8g, and 189053: 2.1g, both from a subadult/adult), and a single sherd of pottery. Cremated bone from posthole 189050 was dated to 360–50 cal BC (2135±30 BP, SUERC-40272), placing it in the Middle–Late Iron Age. A further, undated feature (171023 not illustrated) in the same area contained the disturbed remains of an unurned cremation burial and redeposited pyre debris (46.7g) representing a subadult/adult >15 year old ?female, conceivably the same individual recorded from postholes 189050 and 189053.

In the south-west part of the northern arm of Zone 11 a NW-SE aligned ditch, 190427, was traced from the southern baulk for 16m before terminating (Fig 3.40). A smaller ditch, 183125, curved slightly from the eastern side of ditch 190427 in the direction of the palaeochannel, where it could no longer be traced. It is unclear how these two ditches fit into the larger picture in regard to the Middle or Late Iron Age activity. About 100m up slope to the north ditches 159320 and 159324, both L-shaped in plan, were broadly parallel to ditch 190427, and perhaps fit better with this phase than the subsequent phases of Roman date, but this is admittedly uncertain. The only datable material from either ditch consisted of three sherds of a generic Roman date and two sherds of Early Iron Age date, all recovered from the upper fill of ditch 159320.

Further to the north a slightly sinuous north-south aligned ditch (159302), bearing slightly to the east at its northern end, and possibly continuing to the north-west as ditch 189087. The ditch was up to 1.02m wide and 0.46m deep, and generally exhibited a regular concave profile. Twenty sherds of Middle and Middle or Late Iron Age pottery were retrieved from eight interventions. Ditch 135074 lay around 10m to the east of ditch 159302. Two sherds of Roman pottery came from ditch 135074, but it was cut by a ditch (159310) which was well dated to the early Roman period. At the northern end of ditch 135074 was an undated curvilinear ditch (159305), which had an internal diameter of 9m. This was assumed to be of a similar date and probably to enclose an area to the east, but was truncated by a service trench that ran down the eastern side of the zone.

At the northern end of the zone, a NE–SW aligned wide and shallow ditch (159275) may have been part of a trackway, and is included in this phase due on the basis of the presence of a small sherd of pottery. Ditches 159276 and 159288 in the vicinity, and an east-west aligned ditch 159309 further to the south, are also of this date. Ditch 190408 in the eastern arm of Zone 11, and pit 189011 are also included, although again there was only a single sherd of pottery within each. A further isolated pit or posthole, 211145, towards the centre of this part of Zone 11 contained five sherds of pottery and a residual tranchet axe thinning flake of probable Mesolithic date.

To the south, in Zone 10a, a curvilinear ditch (249192, Fig 3.37) internal to the enclosure represented by ditch 249191 contained a sherd of Late Iron Age date. Ditch 249192 was less substantial than those bounding it, at 0.64m wide and 0.33m deep. Similarly WNW-ESE aligned ditch 249264, the earliest of a sequence of ditches, in the southern part of Zone 10a, contained sherds of Late Iron Age pottery, as did a very small rectangular enclosure (159306) towards the western side of Zone 11.

In Zone 11 (see above) a north-south aligned ditch (178011) cut through the upper fill of the palaeochannel (Fig 3.40). The ditch was extremely hard to identify, as it had mostly infilled with material that originated from the palaeochannel. The ditch was, however, noted to turn to the west at both its northern and southern ends perhaps suggesting some form of enclosure. Four sherds of Late Iron Age pottery were recovered from its single fill.

Zone 12

The Bronze Age features in Zone 12 were overlain by a series of Iron Age enclosures, trackways and related ditches, and a hollow-way which extended to the north and south of the zone (Fig 3.41). Although there were some postholes, no coherent structural plans were identified other than a single four-post structure. The arrangement of features suggests that they perhaps formed part of a 'ladder' settlement, focused around the hollow-way and associated trackways.

The hollow-way and some of the ditches may have originated in the Early/Middle Iron Age and continued in use or were modified or replaced in the Late Iron Age. Although the layout and extent of the enclosure system

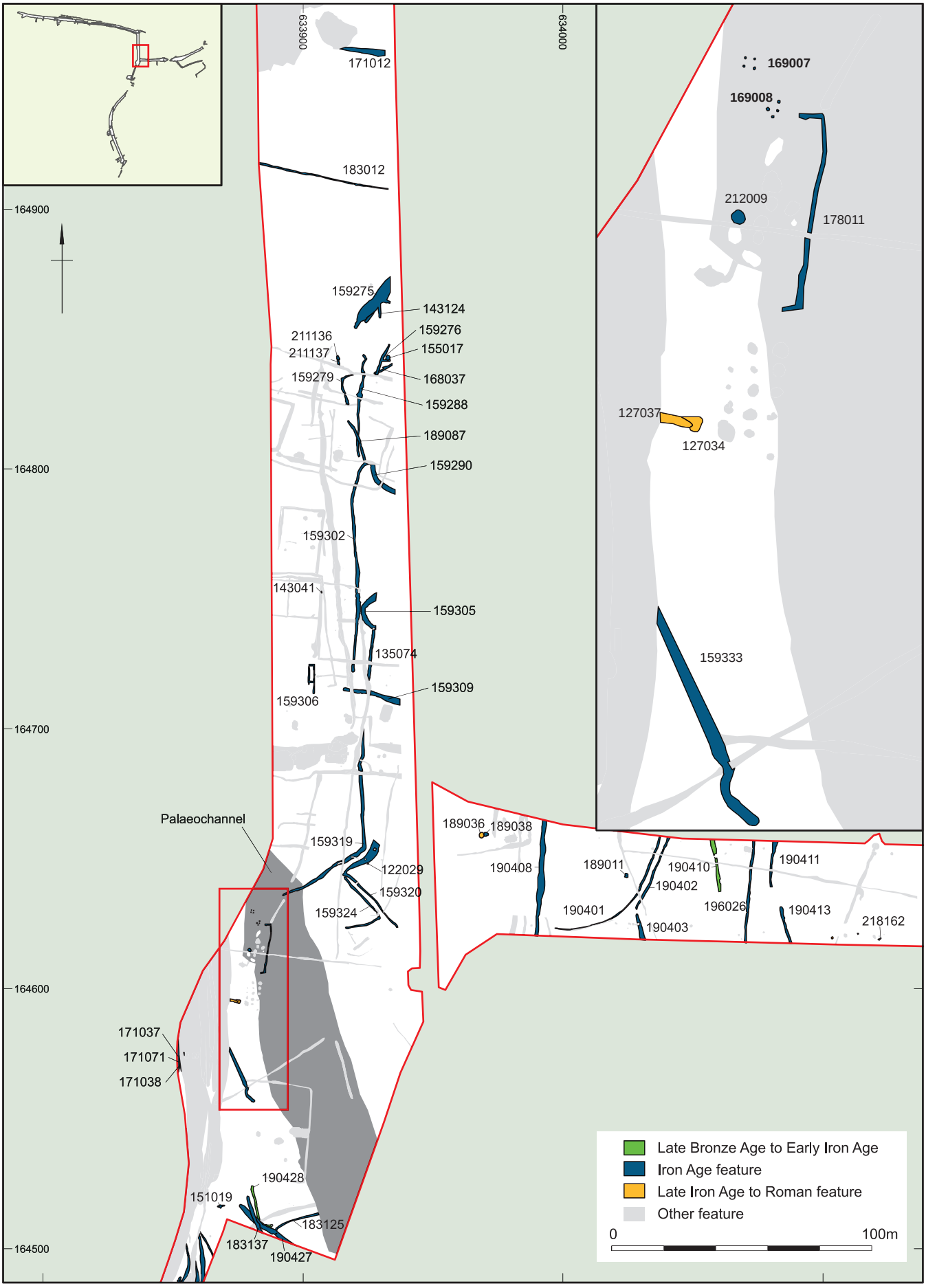


Fig 3.40 Plan of Early Iron Age and Middle–Late Iron Age features in Zone 11

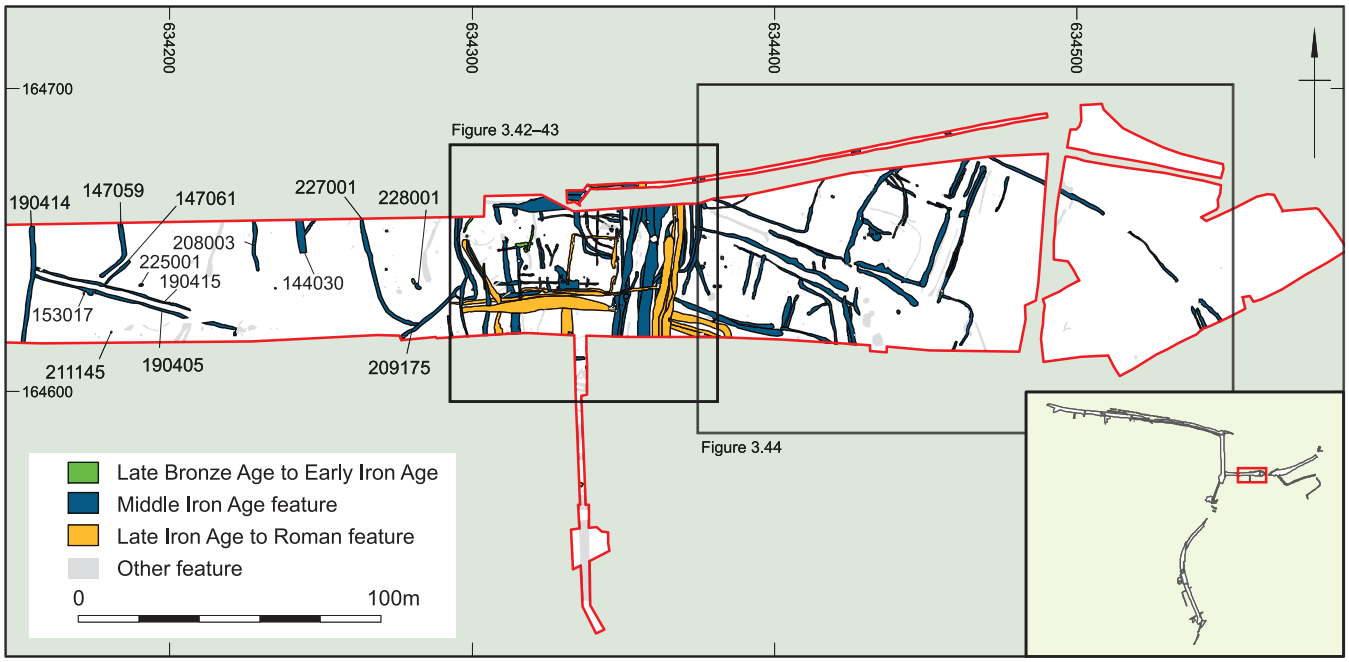


Fig 3.41 Plan of Iron Age features in Zone 12 and eastern part of Zone 11

were not modified greatly during this period, ditches were re-dug, entrances changed and enclosure divisions added or removed, particularly in the Late Iron Age.

Hollow-way 190163

Just west of the centre and in the lowest part of Zone 12 was hollow-way 190163 (Figs 3.42–3; Pl 3.20). This was certainly in use during the Middle to Late Iron Age, though it possibly originated in the Early Iron Age and continued in use at least into the early Roman period. The hollow-way ran across the zone (here 45m wide) on a north to south alignment with sequences of flanking ditches on either side, the ditches being approximately 15m apart (centre-to-centre). The hollow-way was between 4m and 5m wide and approximately 0.65m deep with a thin metalled surface at its base in the centre. This surface consisted of a layer of flint gravel on top of which was a compact mid- to light grey silty sand 0.1m thick, perhaps reflecting a period of rapid silting or short-term disuse.

Flanking ditch 190199 on the west side of the hollow-way was a recut of its predecessor (154056), of

Pl 3.20 Base of hollow-way 190163, showing as darker area crossing centre of excavation area (Zone 12; view from south-west)

which relatively little survived, and was 1.2m wide and up to 0.5m deep. On the east side the ditch sequence was more complex and less clear, though there were at least two (and possibly as many as six) recuts. Ditch 190160 was the largest and the latest of the ditches on this side and was approximately 1.25m wide and 0.55m deep. This ditch terminated towards the northern edge of the zone and this appears to have allowed access between the hollow-way and a trackway (T1 – see below) to the east, though this gap does not appear to have existed during some of the preceding phases, for example ditch 190156 which continued across the width of the zone.

As well as being part of the hollow-way, these flanking ditches would have formed boundaries to the contemporary sequences of enclosures on the west and east sides.

Features west of hollow-way 190163

Immediately west of hollow-way 190163 was a series of enclosures and related features which have been assigned to four provisional phases (1–4) of Middle to Late Iron Age date (Fig 3.42–3). These phases have been assigned using dating evidence, ditch alignments and relationships recorded during excavation. It is important to note that because of difficult site conditions, and the diffuse nature of many of the deposits, the phasing presented here constitutes an attempt to define and interpret a sequence of events occurring in this part of Zone 12 during the Iron Age; aspects of the interpretation are inevitably open to question.

Phase I

The earliest part of the sequence is represented by north-south ditches 190187 and 190188, both approximately

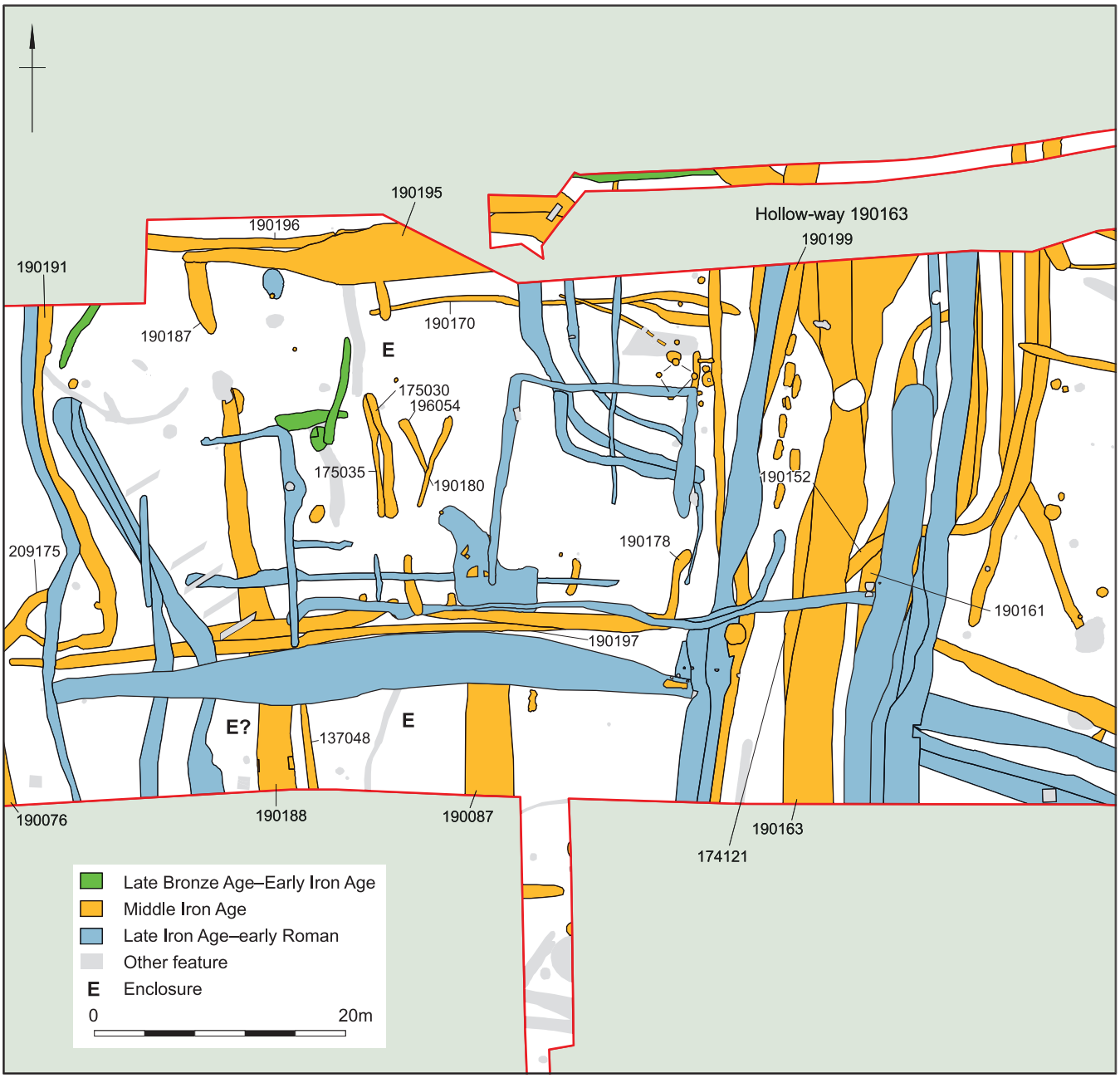


Fig 3.42 Plan of Middle Iron Age features to the west of hollow-way 190163 in Zone 12

0.5m deep and up to 1.5m wide, which probably defined the west side of a roughly rectangular enclosure with a width of approximately 40m (Fig 3.42). A gap of 5m between these ditches defined an entrance towards the northern end of the west side of the enclosure. The hollow-way flanking ditch (190199) formed the western edge of this enclosure.

Ditch 190195 extended east from the northern end of ditch 190187 and formed the northern boundary to the putative enclosure. For reasons that are unclear, ditch 190195 increased to a width of approximately 5m to the east of the north-west corner of the enclosure, and its junction with the hollow-way to the east lay outside the excavated area. The southern limit of the enclosure lay outside the limit of the main area of excavation, but may be represented by one of the unphased, east-west aligned ditches recorded in the narrow pipe trench to the south.

A small number of probably contemporary features were found in the enclosure. Gully 190170, 0.75m wide and 0.3m deep, created a narrow internal division across the northern end, whilst north-south gullies 175030 and 175035 possibly formed an associated, 10m wide division on the west side. Alternatively, these gullies may have served to demarcate an area approximately 30m square within the north-east corner of the larger enclosure. Furthermore, the gap between these two gullies and 190170 may have formed an access point which corresponds with the entrance between enclosure ditches 190187 and 190188 to the west. Gullies 190180 and 196054 immediately to the east of 175030 averaged 0.5m wide and 0.25m deep, and were 7.5m and 5m long respectively (Fig 3.42). It also appears that the relatively large, north-south aligned ditch 190087 formed a division in the southern part of the enclosure. Ditch 190087 was 4.5m wide and 0.55m deep, and extended 9m into the site where it was truncated by ditch 190190.

Phase II

There was a change in the layout and extent of the enclosures, with east-west ditch 190197 and its successors including 190178 dividing the area formerly occupied by the phase 1 enclosure. These ditches were relatively small, up to 1.4m wide and 0.7m deep, but contained moderate quantities of finds, contrasting with the sparse quantities of finds recovered from most of the other ditches in this area. These and the associated ditches to the east, west and north created a new, rectangular enclosure measuring approximately 55m by 30m; the situation to the south of this is less clear (Fig 3.42).

Ditch 190178 was aligned east-west and measured 20m before turning to the north for a short distance at the east end, leaving a gap of 3m between this and ditch 190199, a phase I feature perhaps retained in phase II, which flanked the west side of the hollow-way.

To the west, the boundary of the northern phase 2 enclosure was defined by curving ditch 190191, 1.6m wide and 0.4m deep, which turned to the west and respected east-west ditch 190197 at the south end (209175 may have been a south-western extension to 190191). Ditch 190191 continued to the north beyond the limit of excavation, perhaps turning to the east a few metres to the north of ditch 190196. Ditch 190196 may have marked the northern boundary of the enclosure. This ditch ran on an east-west alignment for at least 16m and was on average 1m wide and 0.35m deep.

To the south of the new, phase 2 enclosure were two ditches that may have defined a further square, or rectangular enclosure of this phase. Ditches 137048 and 190076 lay approximately 22m apart and extended south from the western end of the enclosure for at least 7m, both ditches continuing to the south beyond the limit of excavation. Ditch 137048 was 1m wide and 0.70m deep, and ditch 190076 1.14m wide and 0.40m deep.

As with the northern enclosure, phase 1 ditch 190199 may have survived and defined the east side of the southern enclosure, whilst one of the unphased Iron Age ditches in the pipe trench to the south may have constituted its southern boundary, together defining an enclosure measuring just over 55m by 30m, with ditch 137048 an internal division.

Phase III

During this phase the arrangement of the enclosures may have reverted to that seen in phase 1 (Fig 3.43). On the west side was a relatively substantial and sinuous ditch, 190192, which terminated 7m from the northern edge of the excavation but continued beyond the southern limit. This ditch was 2.2m wide and 0.6m deep, and was subsequently partly recut by ditch 190193 which was only 1.4m wide and 0.5m deep. Apparently respecting the latter was an east-west aligned ditch 190184, 33m long, 0.45m width and on average 0.30m deep, with probably contemporary north-south ditch 190166 of similar size at the east end, a gap of approximately 6m between them perhaps defining an entrance.

To the east, adjacent to the hollow-way 190163, was a group of features perhaps associated with what may have been a small, semi-circular sub-enclosure that extended northwards beyond the limit of excavation (Fig 3.43). North-south aligned gully 190201, 0.7m wide and 0.25m deep, was parallel to the hollow-way and probably defined the east side of the sub-enclosure. The west side of the sub-enclosure was defined by sinuous gully 190165, which was subsequently replaced by curvilinear gully 190173, itself possibly replaced by gully 190174 (though the latter may belong to phase IV). Gully 190165 was fairly insubstantial, with a maximum width of 0.75m and a depth of 0.25m, whilst 109173 was 1m wide and 0.9m deep.

Within the enclosure were at least 15 postholes, including a four-post structure. These postholes had an average diameter of 0.5m and a depth of 0.4m, and contained relatively large amounts of burnt daub. No coherent plans were apparent amongst the remaining postholes. To the south, feature 145156 was an irregularly-shaped pit which cut ditch 190184 but was cut by the southern terminal of ditch 190176. Feature 145156 was at least 6m long and 3m wide, had a maximum depth of 0.65m, and had near-vertical sides and a flat base. This feature is thought to have been a small quarry pit, although in plan it resembled a sunken-featured building.

Phase IV

This was the final Iron Age phase on the west side of the hollow-way and was represented by a further change to the arrangement of enclosures (Fig 3.43). The north-south division present in phase 2 was re-established, this time defined by a more substantial east-west aligned ditch (190190) extending for approximately 50m west of the hollow-way. This ditch, which separated square or rectangular enclosures to the north and south, was 2.9m wide and 1.1m deep, but showed no evidence of having been recut. Ditch 190190 extended as far as sinuous ditch 190189, 1.25m wide and 0.6m deep, which formed the western side of the enclosures. To the east ditch 190190 extended as far as north-south ditch 190200, the fourth and final in the sequence of ditches flanking the west side of hollow-way 190163.

Within the exposed part of the northern enclosure were two smaller enclosures, in the south-east and south-west corners respectively. Both may have been associated with stock control. The larger, sub-square example in the south-east corner measured approximately 30m square and was defined by ditch 190176 which extended around the north and west sides. Ditch 190176 was 1.6m wide and 0.5m deep and was moderately rich in finds. There were gaps towards the east and south ends, probably marking entrances, and ditch 190174 (see above) may have formed an internal division in the north-east corner.

To the west of ditch 190176 was a similarly narrow, shallow ditch (190186) which appears to have formed the east side of a sub-enclosure measuring 17.5m by 11m, with ditch 147113 to the west. Ditch 190186 was on average 0.75m wide and 0.35m deep and 0.75m wide, and ditch 147113 0.8m wide and 0.4m deep. Immediately east of ditch 190186 were two small gullies, 217001 and 190183, which may have formed a

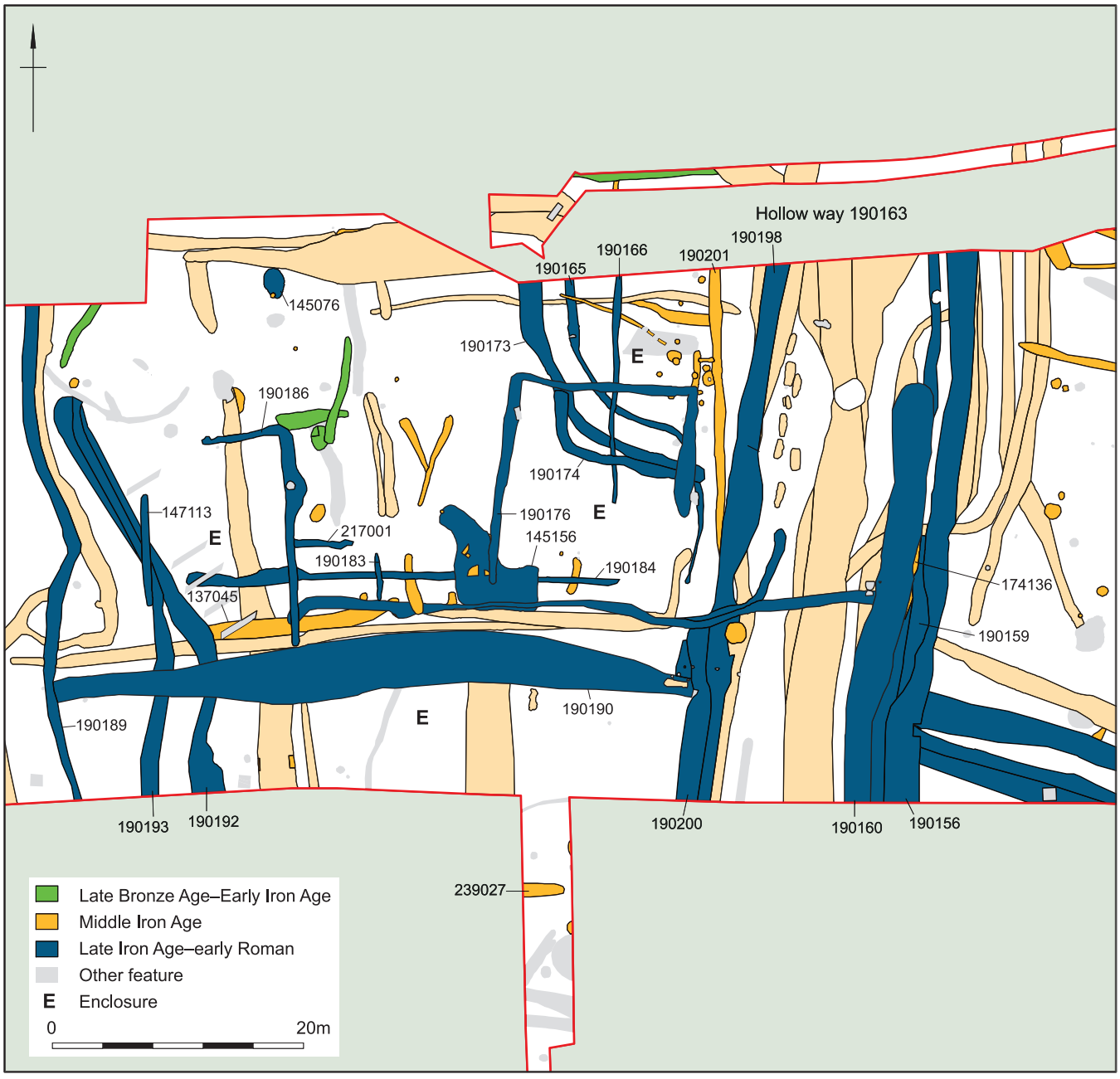


Fig 3.43 Plan of Late Iron Age to early Roman features to the west of hollow-way 190163 in Zone 12

further, small, sub-rectangular enclosure. Both gullies were 0.2m deep and 0.4–0.6m wide, and together enclosed an area measuring approximately 6m by 4m.

Pit 145076 is the only pit assigned to this phase and lay 4m from the northern edge of the site. It was 1.5m long, 1m wide and 0.90m deep. The pit contained a considerable amount of mid- to late Iron Age pottery as well as two Roman sherds, which suggests that it was relatively late within the Iron Age sequence.

Unphased

A relatively small number of features contained no finds, and stratigraphic relationships were equivocal, but most are thought likely to be of Iron Age date. They included shallow pit-like features and short lengths of ditches or gullies.

There are also several undated or unphased features in the pipe trench to the south of the main excavation area (Figs 3.43) including several SW-NE aligned gullies. It seems likely that these gullies were contemporary with gully 239027 which contained Iron Age pottery.

Features east of hollow-way 190163

The easternmost features comprised a complex arrangement of small enclosures arranged around two trackways and an open area. To facilitate description these have been defined as follows: enclosures (designated E1–E4), trackways (T1 and T2) and open area (OA) (Fig 3.44).

Trackway T1 ran SE–NW and probably linked to the hollow-way to the west, with trackway (T2) extending to the north; the open area (OA) lay at the junction of the two trackways. Most of these features extended beyond the limits of excavation, with some elements identified in the 1.8m-wide pipe trench to the north. A narrow ridge of slightly higher ground in the field to the north-west has also been interpreted as the remains of a trackway, and appears to follow the same line as trackway T1. No clear evidence that this trackway extended into Zone 11 (north) was found, though later features at the north end of the zone were on the same alignment. The enclosures to the east of the hollow-way were on a slightly different alignment to those to the west (see Figs 3.43 and 3.44) and the sequence was less complex, though the use of both groups is likely to have spanned the same broad period. The access arrangements to the various enclosures to the east suggest that they were associated with stock control. At least one group of postholes may provide evidence for a contemporary structure, but this remains uncertain.

The eastern end of Zone 12 was crossed by NW–SE aligned ditches 190092 and 190096 and together extended over a distance of at least 100m. The ditches had an average width of 1m and a depth of up to 0.45m, and the gaps are probably a result of truncation, rather than entrances. These ditches appear to have acted as a boundary to the Iron Age activity which lay to the south-west.

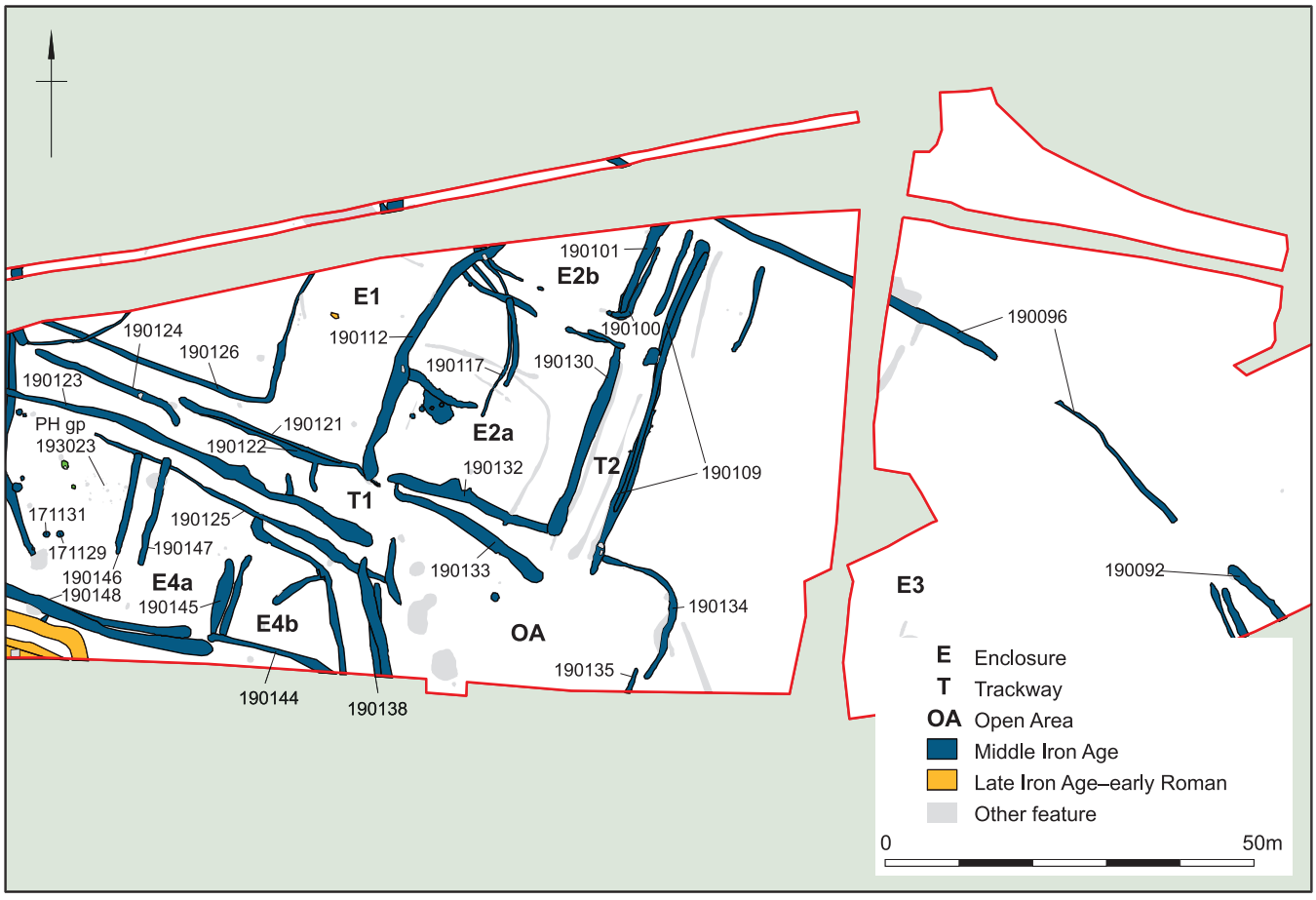


Fig 3.44 Plan of Iron Age features in eastern part of Zone 12

Trackway T1, approximately 5m wide and at least 55m in length, was defined by ditches 190121, 190122, 190124 and 190123, with enclosures E1 and E2 to the north and E4 to the south. The ditches had an average width of 1.45m and a depth of 0.45m. There were entrances to enclosures E1 and E2 to the north, and two small offset gullies within the trackway probably held fences which enabled stock to be controlled.

Trackway T2 lay at 90° to trackway T1 and continued to the north beyond the limit of excavation. It was defined by ditches 190109 and 190100/190130 and was 5m wide, with evidence to suggest that it had been widened from an earlier, narrower form. There was access to enclosures E2 and E3 to the west and east respectively.

Both trackways met in what appears to have been a moderately large open area (OA), covering more than 700m², which extended to the south of the zone. This area was defined by ditches 190132, 190133, 190134, 190135 and 190138, the ditches on average 1.4m wide and 0.6m deep. There was access into enclosures E2, E3 and E4 via narrow gaps between the various ditches, some with offset terminals, another probable indicator of stock control.

Enclosure E1 lay between the hollow-way to the west, trackway T1 to the south and enclosure E2 to the east. It was defined by ditches 190112 and 190121/190124, up to 1.8m wide and 0.7m deep, and appeared to be sub-rectangular in plan. A gully, 190126, 0.55m wide and 0.4m deep, defined part of an internal sub-division.

Enclosure E2 was one of the more complex enclosures and lay between E1 and T2 on the north side of T1, with E3 to the east. Most of it lay within the excavated area and it was defined by ditches 190112 to the west, 190132 (and its probable predecessor, 190133) to the south, and 190100/1900101 and 190130 to the east, with 190096 to the north. These ditches had an average width of 1.8m and an average depth of 0.7m, and enclosed an area of approximately 900m². A small amount of Early Bronze Age pottery found at the southern end of ditch 190130 probably derives from an earlier feature disturbed by the ditch.

Within enclosure E2 were a number of smaller gullies, for example 190110 and 190117, up to 0.7m wide and 0.2m deep, both of which were probable early sub-divisions. The enclosure was subsequently divided into two areas, E2a and E2b, with access to both via an entrance from T2 in the east side; there was a second entrance to E2a in the south-west corner.

To the east of T2 was E3, the largest of the eastern enclosures. This was bounded by ditch 190092/190096 to the north-east and 190134 to the south-west, with two entrances in the west side, from T2 and the open area. This enclosure covered area of at least 3550m² and had few internal features.

Enclosure E4, like E2, was relatively complex and comprised two or more phases, with a probable entrance in the north-east corner providing access from the open area. T1 lay along the north side – ditch 190123 forming the boundary – and hollow-way ditch 190156 defined the west side, with ditch 190138 to the east. Ditches 190144, 190145 and 190148 appear to have been internal sub-divisions, separating E4a and E4b, which have areas of approximately 840m² and 360m² respectively. Two parallel ditches, 190146 and 190147, are later internal features within E4a and posthole group 193023 represents a structure, but its form and date are unclear. Seventeen postholes, possibly of two phases, have been assigned to this group, and these have an average diameter of 0.3m and a depth of 0.2m. Eleven further, scattered postholes lay to the west of group 193023 and two of the larger examples, 171131 and 171129, contained Late Iron Age pottery.

Cemetery

There were 13 inhumation burials in Zone 12, ten of them in a group, with the remaining three more isolated, although located in the same general area and probably broadly contemporary (Fig 3.45). Further fragments of human bone came from the colluvial deposits (126015) in this area, the small number of bones representing an infant (*c* 2–3 yr.) and an adult (*c* 30–45 yr.) possible female; this skeletal material possibly derived from the *in situ* burials. In addition, what may have been the remains of a further *in situ* burial (of an adult *c* 20–25 yr. female) came from a ditch (268005) exposed in a pipe trench which ran parallel to the northern edge of the excavation, some 15m to the north of the main group of burials.

The group of ten burials were all aligned north-south and positioned between hollow-way 190163 and its western flanking ditches, suggesting that the hollow-way was in use at this time. The burials were cut through a thin layer of dark greyish brown material which covered the hollow-way and its flanking ditches. They appear to run almost in line, over a distance of approximately 14m, with grave 136049 being the furthest north and 153055 the furthest south. The graves had an average length of 1.75m, a width of 0.6m and a depth of only 0.1m, and several were very difficult or impossible to discern in plan. Some graves intercut and the burials comprised five adults, two subadults/adults, two juveniles and an infant. All were buried supine or flexed except the individual in grave 166002 who was prone. There was only one definite grave good, an iron ring (ON 2) around the left

Pl 3.21 Middle Iron Age grave 166005; close up of skeleton 166004 with iron armlet on left humerus (Zone 12; view from east)

humerus of the adult female burial in grave 166005 (Pl 3.21). In addition, two fragments of a broken shale armlet rough-out came from grave 166002, but these were not clearly associated with the body and may have been redeposited in the grave fill. The same may apply to a small iron nail from grave 136033.

Grave 153040 was on an east-west alignment and cut through the top fill of the northern part of hollow-way 190163. It may have belonged to the main group of burials a short distance to the south and contained a juvenile. Grave 153028 was located to the south-west of the group of ten graves. It was also aligned east-west, contained an adult male, and cut the top fill of ditch 190190. Grave 153048, 0.2m deep and on a north-south alignment, lay to the west of grave 153028, and contained an adult female which had been buried prone (Pl 3.22).

Bone from two of the graves, grave 136033 amongst the main group and 153028 to the south-west, was submitted for radiocarbon dating. That from grave 136033 gave a radiocarbon determination of 410–210 cal BC (2285±30 BP, SUERC-40287), and that from 153028 a determination of 380–200 cal BC (2215±30 BP, SUERC-40288), indicating both burials to be of Middle Iron Age date.

Pl 3.22 Middle Iron Age grave 153048; prone burial (Zone 12; view from east)

In addition, teeth from four burials were sampled for isotopic investigation of residential mobility (Millard with Nowell, Vol 2, Chap 13, Appendix 1). These comprised two females from adjacent graves 136033

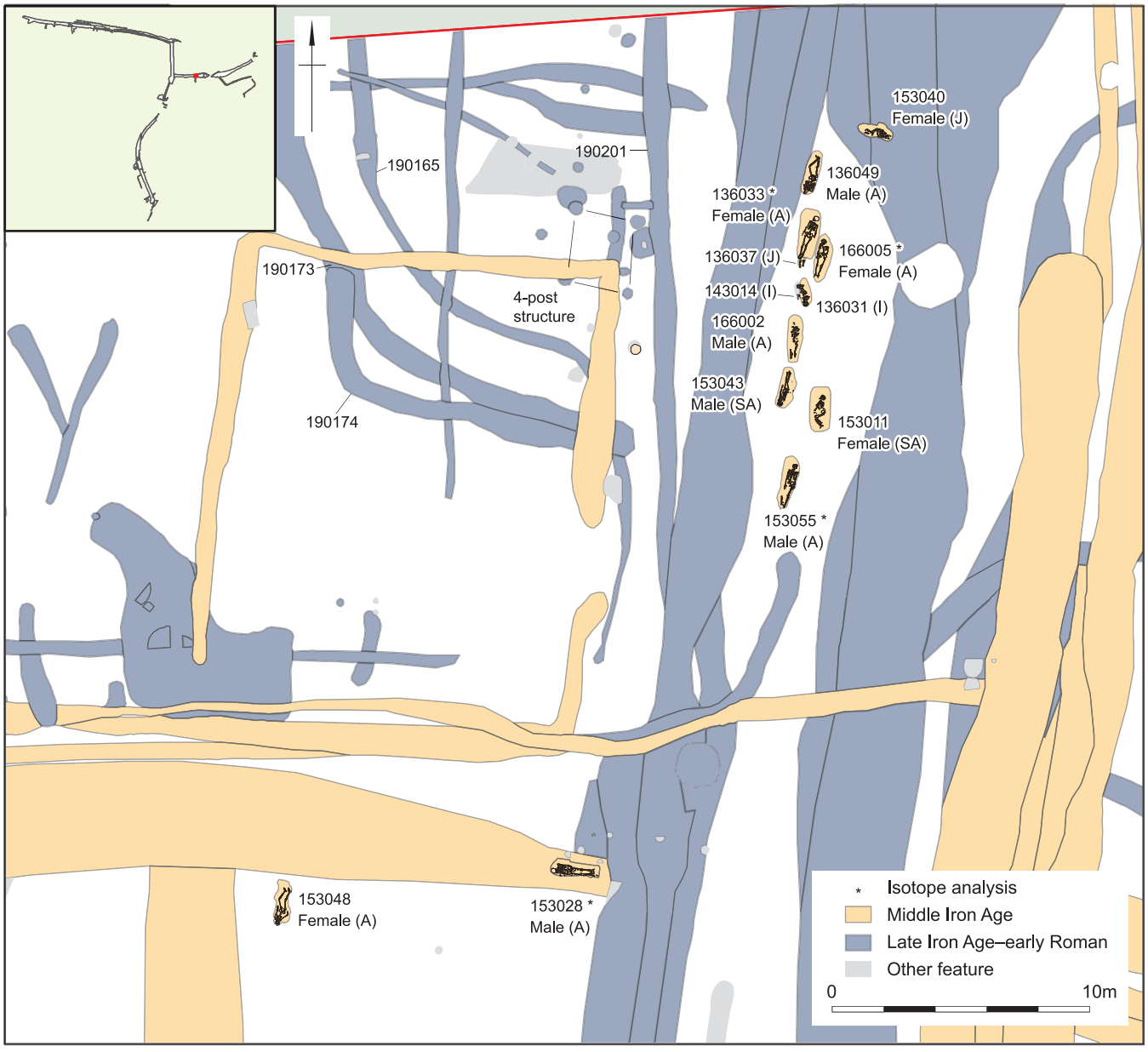


Fig 3.45 Plan of Middle Iron Age cemetery in Zone 12

and 166005 towards the north end of the linear cemetery, the male from grave 153055 at the south end of the line, and another male from grave 153028, an outlier approximately 15m further to the south. In summary, the results indicate that all four individuals spent part of their childhood elsewhere, though exactly where is a matter of some uncertainty (below). This study provides comparative data for the contemporary burials at Cliffs End Farm, where all the individuals had been subject to isotope analysis with intriguing results indicative of migration (McKinley *et al* 2013; McKinley *et al* forthcoming).

Grave catalogue

Grave 136049 (Burial 126013)
Not illus
Grave: N–S, indeterminate shape – 1.90 x 0.50m, >0.01m deep. Fill of mid-yellowish brown sandy silt, occasional small angular stones and shell inclusions.
Human Remains: Burial is supine, part flexed part extended. *c* 85% skeletal recovery. Adult *c* 21–25 yr. Male.

Grave 136031 (Burial 136030)
Not illus
Grave: N–S, indeterminate shape – 0.85 x 0.35m, >0.01m deep. Fill of mid-greyish brown clay silt, occasional small angular stones.
Human Remains: Burial is part flexed on left side. *c* 45% skeletal recovery. Infant *c* 4 yr.

Grave 136033 (Burial 136034)
Pl 3.23
Grave: NE–SW, sub rectangular – 1.85 x 0.82m, 0.32 deep. Fill of mid-yellowish brown sandy silt, occasional small sub angular stones.

Pl 3.23 Middle Iron Age grave 136033 (Zone 12; view from west)

Pl 3.24 Middle Iron Age grave 153011 (Zone 12; view from west)

Human Remains: Burial is supine and extended. *c* 85% skeletal recovery. Adult 25–29 yr. Female.
Grave Goods: Small iron ?nail.
Radiocarbon dating: 410–210 cal BC (2285±30 BP, SUERC-40287).

Grave 136037 (Burial 136036)
Not illus
Grave: N–S, indeterminate shape – 0.34 x 0.27m, >0.01m deep. Fill of mid-greyish brown sandy silt, occasional sub-angular small stones. Grave largely cut away by grave 136033, with much of the human bone redeposited in the latter.
Human Remains: Burial is supine and extended. *c* 35% skeletal recovery. Juvenile 5-6 yr.

Grave 153011 (Burial 153012)
Pl 3.24
Grave: N–S, irregular shape – 1.40 x 0.60m, 0.20 deep. Fill of mid-greyish brown sandy silt.
Human Remains: Burial is flexed on its right side. *c* 85% skeletal recovery. Subadult *c* 13–14 yr. Female.

Grave 153014 (Burial 153016)
Not illus
Grave: N–S, irregular shape – 0.70 x 0.32m, 0.10m deep. Fill of mid-greyish brown sandy silt.
Human Remains: Burial appears to have been made extended. *c* 25% skeletal recovery. Infant *c* 9–12 mth.

Grave 153028 (Burial 153027)
Not illus
Grave: E–W, irregular shape – 1.90 x 0.70m, 0.10m deep. Fill of dark brown sandy silt, occasional flint inclusions.
Human Remains: Burial is supine, extended. *c* 99% skeletal recovery. Adult *c* 40–50 yr. Male.
Radiocarbon dating: 380–200 cal BC (2215±30 BP, SUERC-40288)

Grave 153040 (Burial 153039)
Not illus
Grave: E–W, oval – 1.70 x 0.50m, 0.15m deep. Fill of dark brown sandy silt, occasional flint inclusions.
Human Remains: Burial is supine and slightly flexed. *c* 60% skeletal recovery. Juvenile, *c* 7–9 year. ?Female.

Grave 153043 (Burial 153042)
Not illus
Grave: S–N, sub-oval – 1.59 x 0.65m, 0.15m deep. Fill of mid-grey soft clayey silt, rare angular flint (>0.02m) inclusions.
Human Remains: Burial is supine and extended. *c* 80% skeletal recovery. Juvenile/subadult *c* 11–13 yr. ?Male.

Grave 153048 (Burial 153047)
Pl 3.22
Grave: S–N, sub-oval – 1.75 x 0.66m, 0.21m deep. Fill of mid-grey soft clayey silt.
Human Remains: Burial is prone. *c* 75% skeletal recovery. Adult *c* 40–50 yr. Female.

Grave 153055 (Burial 153054)
Not illus
Grave: N–S, oval – 2.07 x 0.64m, 0.17m. Fill of dark brown clayey silt.
Human Remains: Burial is supine and extended. *c* 70% skeletal recovery. Adult *c* 35–45 yr. Male.

Grave 166002 (Burial 166001)
Not illus
Grave: N–S, sub-rectangular – 1.75 x 0.57m, >0.01m deep. Fill of mid-brown clayey silt, occasional flint inclusions.
Human Remains: Burial is prone. *c* 25% skeletal recovery. Adult *c* 30–45 yr. ?Male.
Grave Goods?: Two fragments of a broken shale armlet rough-out (<10% of object).

Grave 166005 (Burial 166004)
Pl 3.21
Grave: N–S, sub-rectangular – 1.90 x 0.64m, 0.18m deep. Fill of mid-orange brown clayey silt, occasional flint inclusions.
Human Remains: Burial is supine and extended. *c* 75% skeletal recovery. Adult 45–55 yr. Female.
Grave Goods: ON 2. Complete (though broken) iron armlet around left humerus; ON 3. Iron nail fragments.

Zones 13, 14, 15 and 26

Early to Middle Iron Age

Zone 13
Unless all evidence of it had been destroyed, the location of any settlement associated with the Late Bronze Age–Early Iron Age D-shaped enclosure, field systems and palisade in Zones 13 and 14 (see above) did not lie within the road corridor. There had clearly been a degree of erosion in this area, particularly on the highest exposure of chalk in Zone 13, where a criss-cross pattern of plough marks was present (and visible on aerial photographs), but this seems unlikely to explain the absence of structural remains associated with such settlement. At some point later in the Early Iron Age, however, a new settlement was established in Zone 13 (Fig 3.46), immediately beyond the south-western end of the palisade and superimposed over Barrow 2 on a high point in the local topography formed by a slight southward-projecting spur of the 25m contour (the southern end of this ridge was occupied by the barrow cemetery and enclosures at Cliffs End Farm; McKinley *et al* forthcoming). Barrow 2 is likely to still have been a significant feature in the landscape at this time, with the ditch at least surviving as an earthwork and requiring some infilling and levelling prior to the construction of a trapezoidal enclosure (Pl 3.25).

Trapezoidal enclosure
The main element of this new settlement was a trapezoidal enclosure (134099, Fig 3.47), the long sides of which were 83m and 81.5m long (on the north and south respectively); the short sides were 50m and 32m (west and east respectively); the southern corner of the enclosure lay just outside the excavation area. The enclosure ditch was a substantial feature with a steep-sided V-shaped profile, typically 1.6–2m deep and 3m wide at the surface (Fig 3.47; Pl 3.26a–e). In most of the excavated sections, fill patterns did not suggest either an internal or external bank as the source of the material

Pl 3.25 Early–Middle Iron Age trapezoidal enclosure 134099 and surrounding pit complexes, overlaying Early Bronze Age ring-ditch 134100 (Barrow 2) upper left (Zone 13, with Zone 26 in foreground; view from south)

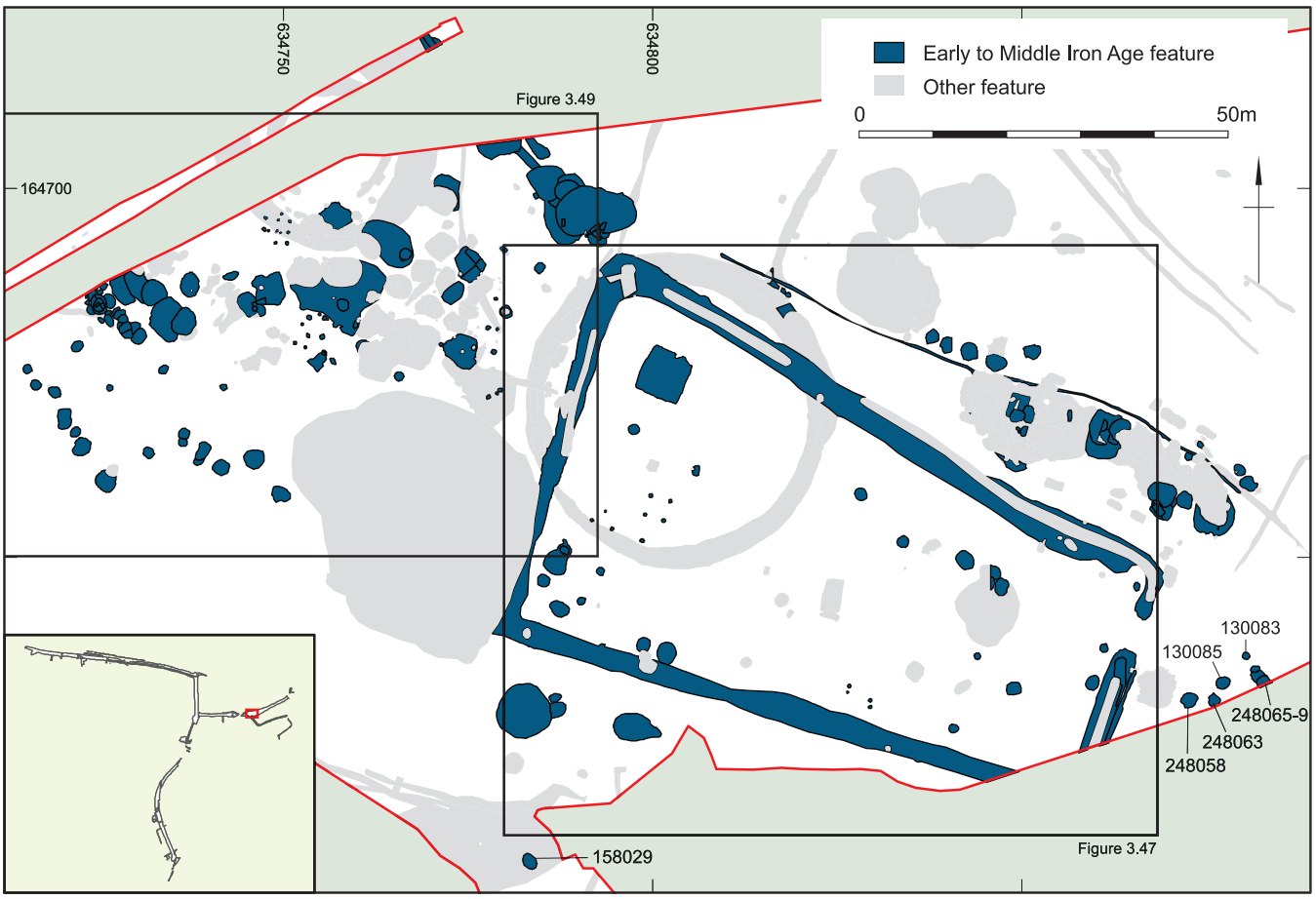


Fig 3.46 Plan of Early–Middle Iron Age features in Zone 13

filling the ditch; in six locations it was suggested that material entered the ditch from within the enclosure, and in one location that this came from without. The presence of an internal bank would pose some difficulties. In the south-western corner especially, pits immediately inside the ditch would have lain below any such bank while their contents (particularly ceramics) suggest that they are contemporary with the occupation of the enclosure. One alternative would be that these pits were situated on a berm between the ditch and a bank set back by at least four metres from the ditch edge. In this case, any bank is likely to have been discontinuous, as access to the pits must have been possible. A discontinuous bank would also account for the differing fill patterns in the excavated ditch sections.

The lower fills of the excavated sections of the enclosure ditch were largely free from cultural material (small quantities of animal bone and a little fired clay). The earliest dated material was Early to Middle Iron Age pottery (probably 5th–4th century BC) in the latest of the thin fills in the lower third of the ditch. Above this, much larger-volume fills contained predominantly Middle Iron Age ceramics, with Late Iron Age and Roman material in the upper third of the profile. A date towards the end of the Early Iron Age is therefore proposed for the creation and initial use of the enclosure.

A large group of fired clay from the upper ditch fills included evidence for salt working comprising hearth structure, furniture and briquetage vessel sherds (see Poole, below). Elsewhere, further remains probably deriving from salt working include a group of triangular perforated bricks in pit 130032, and several relatively large groups of fired clay from pits 125053 and 168135 and enclosure ditch 134099 (Figs 3.47, 3.49).

Sunken-featured building

A large sunken-featured building (174060), approximately 6.5m square and surviving to 0.8m below the machined surface, was situated in the north-west corner of the enclosure (Fig 3.48, Pl 3.27). A natural chalk ramp led down into the interior on the south-west side. Three postholes adjacent to it (174096, 174094 and 174098) probably formed an entrance structure, while similar postholes in the corners of the building (174095 and 174097) probably held load-bearing members. At the base of the walls a gully approximately 0.5m wide and progressively shallower away from the entrance was of uncertain purpose, but was perhaps a bedding trench for beams or boards.

The building was filled with a series of dumped layers containing refuse (pottery – predominantly of Early to Middle Iron Age date – animal bone, shell, fired clay, one iron and one stone object). Notable among this material was the cranium of an adult (over 35 years old) human, possibly male, cleanly cut from midway across the eye sockets to the rear of the head, where there is also some other possible trauma (see McKinley, Vol 2, Chap 13). No other adult human remains were present, but approximately 40% of a neonate (0–1 week) was recovered from another layer. The cranium was dated to 1880–1680 cal

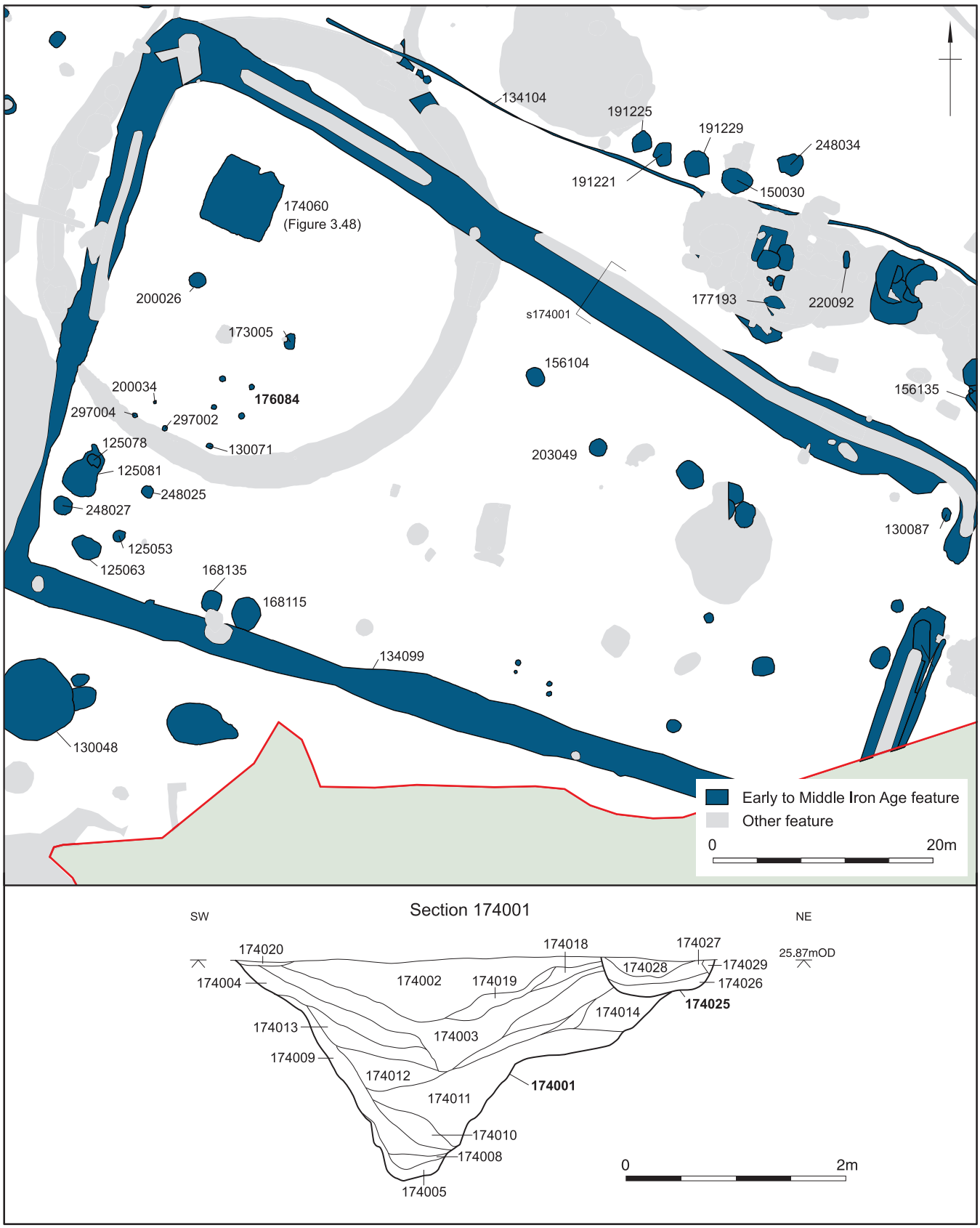
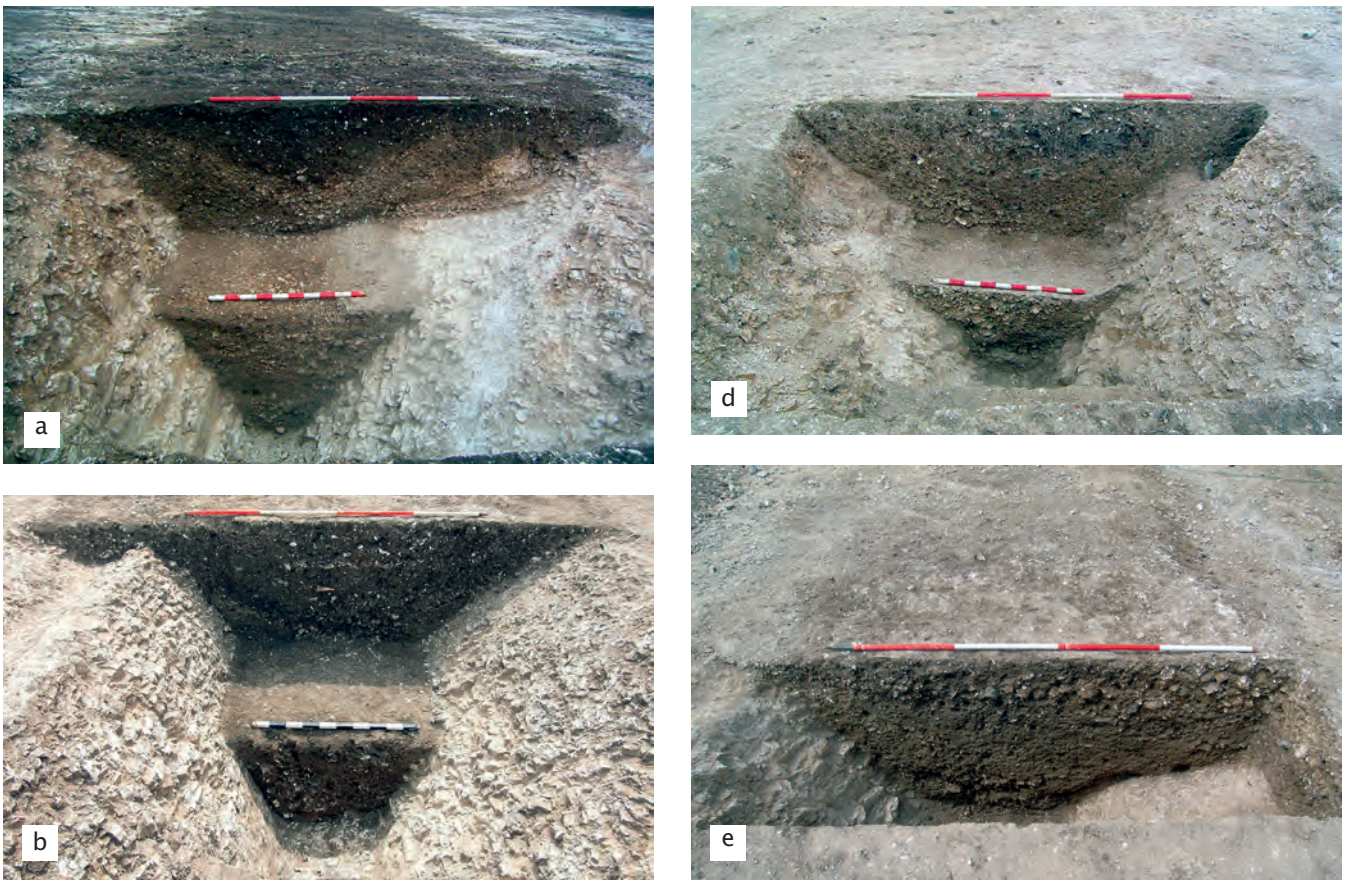


Fig 3.47 Plan and section of trapezoidal enclosure 134099 (Zone 13)

BC (3445±30 BP, SUERC-40292). The coincidence of dates between this skull and the Early to Middle Bronze Age inhumation burials in Barrow 1 suggest that the skull may have originated in this same cemetery.

The ceramics in the fills of the building indicate that it went out of use during the first phase of occupation of the enclosure, towards the end of the Early Iron Age (in or before the 5th century), and that it filled gradually over the succeeding centuries. Residues from ceramics were radiocarbon dated to 400–200 cal BC (2250±35 BP, SUERC-40479). A fowl ulna from 174073 was radiocarbon dated to 200 cal BC–cal AD 10 (2075±35



Pl 3.26 Trapezoidal enclosure 134099 (Zone 13) ditch sections: a) north side (from south-east), b) east side/ entrance terminal (from south-west), c) east side, south of entrance (view from north-east), d) south side (from north-west), e) west side (from south-west)

BP, SUERC-40734). South of the structure at the western end of the enclosure were groups of other contemporary features.

Pits

Two pits were situated approximately 5m south of the building (Fig 3.47). Pit 173005 was very heavily truncated and its single surviving fill contained only some animal bone, fired clay and four sherds of Early to Middle Iron Age pottery. Pit 200026 was a much more substantial feature surviving to a depth of 0.8m, again containing animal bone and fired clay, along with a larger quantity of Early to Middle Iron Age pottery in its four fills.

In the south-western corner of the enclosure a group of six pits belonged to this same phase of activity. Two (125081 and 125078) intercut, and both contained Early to Middle Iron Age ceramics. The features in this group divide into two: small to medium-sized features with one or two fills; and medium-sized to large features with four or more fills. Both types contained assemblages of animal bone, shell, slag and Early to Middle Iron Age ceramics, while individual examples also contained triangular brick fragments (248025) and iron fittings (248027). The material seems to derive from the discard of domestic refuse, in some instances on quite a considerable scale (pit 125053, for instance, contained over 3kg of pottery). Pit 125063 contained pottery and animal bone. As for other features of this period in Zone 13, cattle bones represented the largest meat weight but there was a

Pl 3.27 Early–Middle Iron Age sunken-featured building 174060 (Zone 13; view from south-west)

greater MNI (minimum number of individuals) for sheep/goat (see Strid, Vol 2, Chapter 14).

Three other isolated pits belong to this phase of activity. All lie in the eastern part of the northern half of the enclosure. One (130087) is small and shallow, located in the extreme north-eastern corner. Within its fills were limited quantities of animal bone, stone and Early to Middle Iron Age pottery. The other two (203049 and 156104) were larger with correspondingly larger assemblages of animal bone and pottery. Pit 156104 in particular was rich in ceramics, with over 5kg of material in its six fills.

Pit 168115 was adjacent to the enclosure ditch on the southern side; although in section the pit was cut by the first phase of the enclosure ditch, the two overlap by only 0.10m, the overlap apparently caused by the weathering-back of the ditch edge. Although its contents were the same as those of the other pits belonging to this phase (animal bone, fired clay, Early to Middle Iron Age pottery in the lower fills), this pit is distinguished by the presence of Middle Iron Age ceramics in the upper half. This is the only instance within the trapezoidal enclosure of Early to Middle Iron Age and Middle Iron Age ceramics in a single feature. A fowl femur from 168117, an upper fill, was radiocarbon dated to 380–170 cal BC (2190±35 BP, SUERC-40733).

Postholes

Between the two groups of pits at the western end of the enclosure was a zone occupied by postholes. These formed two groups, including a four-post structure (176084). Each of the postholes in 176084 was approximately 0.55m in diameter and defined a structure 2.75m square; two of which (176082 and 200038) contained Early to Middle Iron Age pottery.

The second group was a linear arrangement of three postholes (297004, 297002, 130071) aligned west-east over a distance of 7m. These probably mark the location of a fence, and single posthole (200034) 1.5m to the north was probably another element of this boundary. Only 297002 was dated (containing Early to Middle Iron Age pottery), but the location of these postholes in

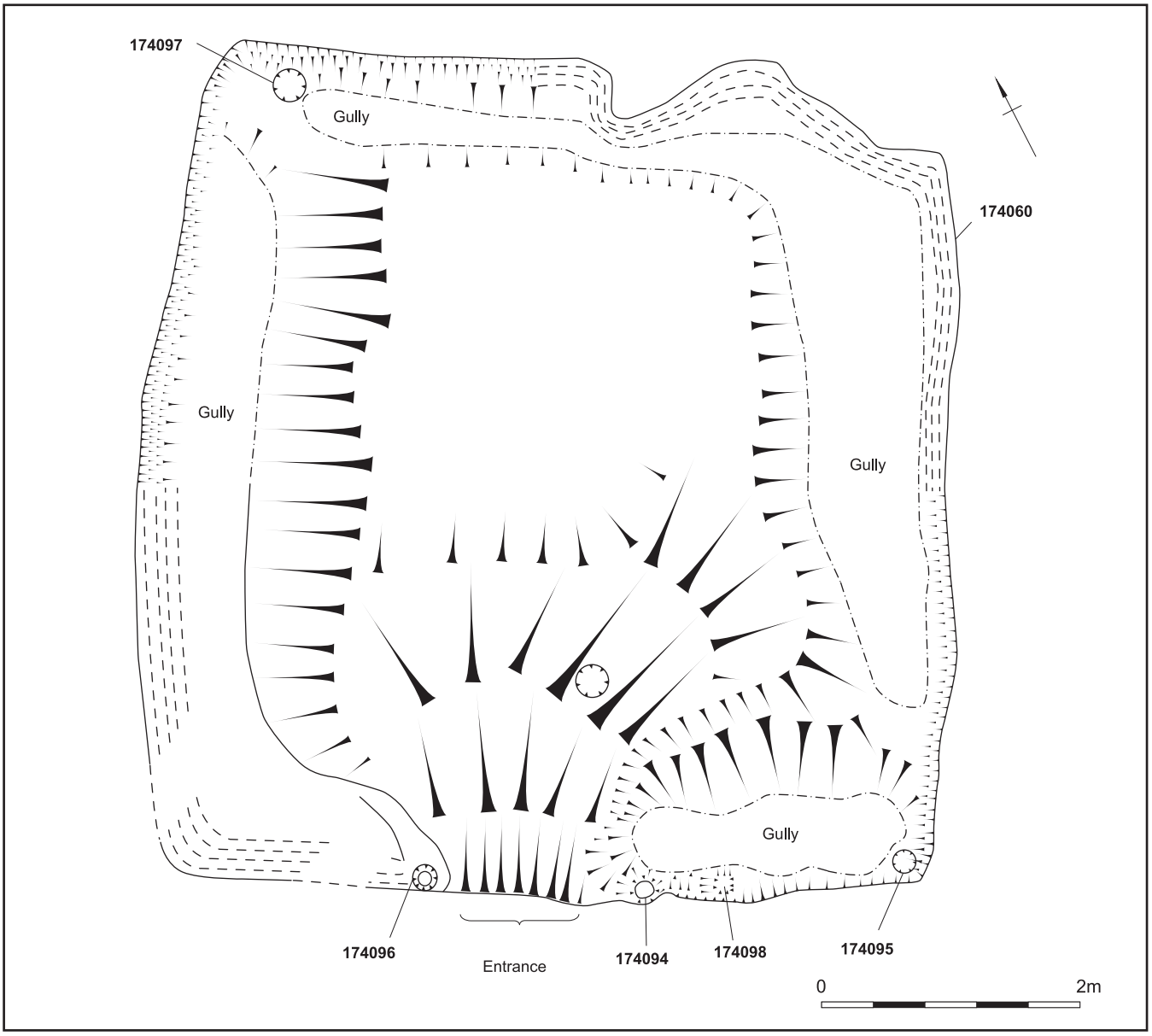


Fig 3.48 Plan of Early–Middle Iron Age sunken-featured building 174060 (Zone 13)

a zone free of other contemporary features and dividing the larger group of pits from the sunken-featured building does suggest the division of the space within the trapezoidal enclosure into areas given over to particular activities (dwelling; rubbish disposal; perhaps metalworking, see below). This division could have been further reinforced by the presence of the by now largely infilled ring-ditch of Barrow 2, which may have partly enclosed (on the south-east side) the area occupied by sunken-featured building 174060 and four-post structure 176084.

Pits and other features outside the enclosure

There were numerous pits and clusters of pits to the west of the trapezoidal enclosure (Fig 3.49). Most of the pits were sub-circular or oval, occasionally sub-rectangular, between 1.5–3m diameter and most 0.7–1m deep (Pl 3.28). At the south-western end of this area, six pits (186033, 150014, 139049, 139044, 191066 and 173013) were arranged in a definite line. A series of intercutting pits (including 186052, 186114, 186072, 211067) was situated 13m to the north-east while another seven (187007, 186013, 186018, 186021, 186020, 191054 and 166007) formed a second line extending eastwards. The arrangement of these features suggests that they may have been dug along boundaries, or around vanished structures. Domestic activity was indicated by large quantities of animal bone and pottery along with smaller amounts of fired clay, shell, spindle whorls, triangular bricks (and/or briquetage) and worked stone objects.

Pl 3.28 Early–Middle Iron Age pit 173103 (Zone 13; view from south-west)

Among the mass of material from these pits were a number of pieces worthy of individual note. Pit 186033 contained joining fragments of a small crucible with a pouring lip. The size of this object suggests that it was for precious metals; although X-Ray Fluorescence (XRF) analysis showed no surviving traces of metal (see Vol 2, Rubinson, Chap 4). The form is very unusual (if not unique) at this date (P Craddock pers. comm.). Pit 211067 contained three sherds from a vessel with polychromatic decoration consisting of scored rectangular panels outlined in red, infilled in black and with a central brown oval.

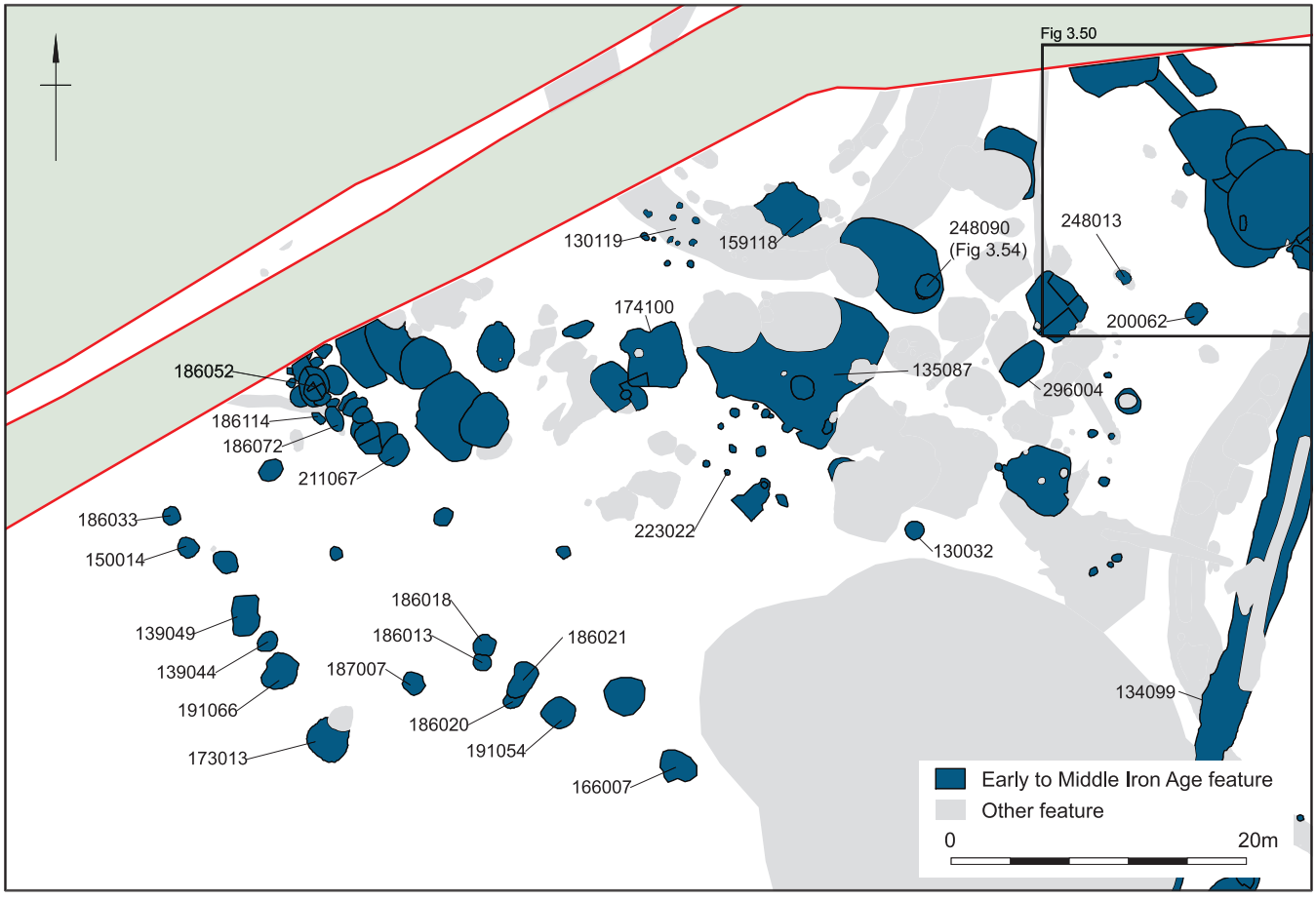


Fig 3.49 Plan of Early–Middle Iron Age features to north-west of trapezoidal enclosure 134099 (Zone 13)

Material such as this suggests the presence of a settlement of some importance.

North of these lines of pits was an area that was very heavily pitted and quarried. Extensive sequences of intercutting features were present, most of which were not very securely dated but which seem to be broadly contemporary with the construction and use of the enclosure. One (296004) contained 5g of redeposited cremated bone from a subadult or adult individual over 13 years old.

Central to this group of features was a spread of debris covering an area of 13m by 10m. This layer (135087) seems to have marked an area of occupation or other activity and was surrounded by a large number of contemporary Early to Middle Iron Age features. Although most of these features appear to be pits and quarries, some may have been structural, though with the possible exceptions of 174100 and 159118 there are no pits which are convincing as possible sunken-featured buildings, and certainly none are of the size, shape and regularity of structure 174060 within the trapezoidal enclosure. Immediately adjacent to the southern edge of the spread, a group of seven small pits or postholes, including 223022, defined a circular area 3.5m in diameter. The features were very heavily truncated, and none had any evidence to date it (two contained fragments of daub), but the possibility remains that they mark the location of a small structure. Four other small pits or postholes one metre to the south may have formed parts of a porch, fence or other ancillary structure. One of these (223022) contained Early to Middle Iron Age pottery.

Amongst the numerous other postholes or possible postholes present in this area, 11 overlying the outer ditch of Barrow 1 appeared to form two overlapping six-post structures at right angles to each other (130119). Three of these features contained small quantities of Early to Middle Iron Age pottery. The structure appears to have been of at least two phases, and measured 3.5m by 1.5m, suggesting some sort of small shed or store house or – just possibly – an excarnation platform. A number of the pits and other features east of the six-post structure contained disarticulated human remains or skeletons. Other, possibly similar structures are likely to be represented amongst the postholes in the area.

A further intercutting complex of pits and quarries lay immediately outside the north-western corner of the trapezoidal enclosure (Fig 3.50). One pit (126141) which lay within this complex contained a neonate burial (126143, not illustrated) and Early to Middle Iron Age ceramics, whilst human bone from grave 126127 (an adult possible female) in this same area was dated to 380–180 cal BC (2200±30 BP, SUERC-40289). An adult male from grave 246011 was dated to 390–200 cal BC (2240±30 BP: SUERC-40301) and also contained Early to Middle Iron Age ceramics.

Towards the northern end of this area, several features contained human bone. Feature 159118 was a quarry hollow between the ditches of Barrow 1. It contained redeposited bone from an adult female and two neonates, along with 7.2g of redeposited pyre debris and cremated bone from an infant *c* 1.5–4 years old; a further 7.1g of cremated bone, perhaps from the same individual, came from another deposit in the feature. Grave 248090, 11m east of quarry hollow 159118 (Fig 3.49), contained a flexed inhumation burial (a subadult male) at the base of a pit, which was later cut by a second pit containing Middle Iron Age ceramics. A crouched inhumation (248012 – a juvenile) lay in a pit (248013) 13m further

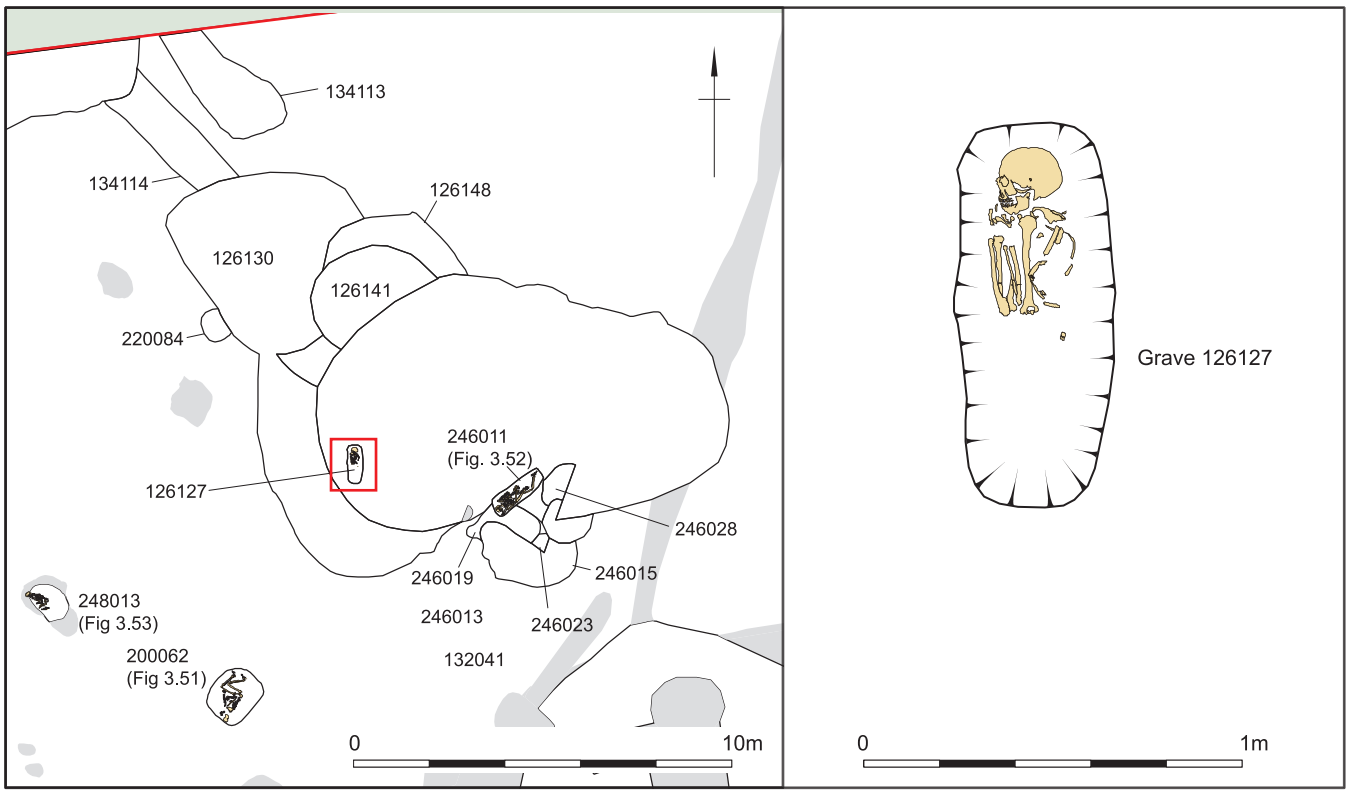


Fig 3.50 Plan of features to north of trapezoidal enclosure 134099 (Zone 13)

east, and 5.5m beyond this was grave 200062 which contained another flexed inhumation burial (200066 – an adult male) (Fig 3.51). Although several of these burials are not closely dated, it seems likely that they all belong to this same phase of Middle Iron Age activity. Details of these burials are given in the Grave catalogue below.

East of the enclosure entrance, a small group of pits is likely to be contemporary (Fig 3.46). One (248058) contained a moderate quantity of redeposited human bone (*c* 12% of an adult *c* 18–25 year old possible female) and Early to Middle Iron Age pottery; three others (130083, 130085 and 248063) contained similar pottery. The others (intercutting group 248065, 248067 and 248069) are undated, but are maybe of Early to Middle Iron Age date by association.

A narrow gully 134104 lay roughly parallel to the northern side of the enclosure. The south-east end of this gully intersected with an earlier set of field boundary ditches on the same alignment, while the other end terminated just over 10m west of the intersection of the Late Bronze Age–Early Iron Age palisade ditch and Early Bronze Age Barrow 2. Although physically quite slight, this gully seems to have marked a boundary of some considerable significance and permanence, which appears to have divided the activities carried out (in the Early to Middle Iron Age at least) within and around the trapezoidal enclosure from the agricultural landscape to the immediate north-east. The line of this boundary was followed by at least four Early to Middle Iron Age pits (150030, 191221, 191225 and 191229) on the northern side, and by a sequence of quarry pits forming the earliest events in the long sequence of quarrying and other activity between the trapezoidal enclosure and the gully (activity continuing

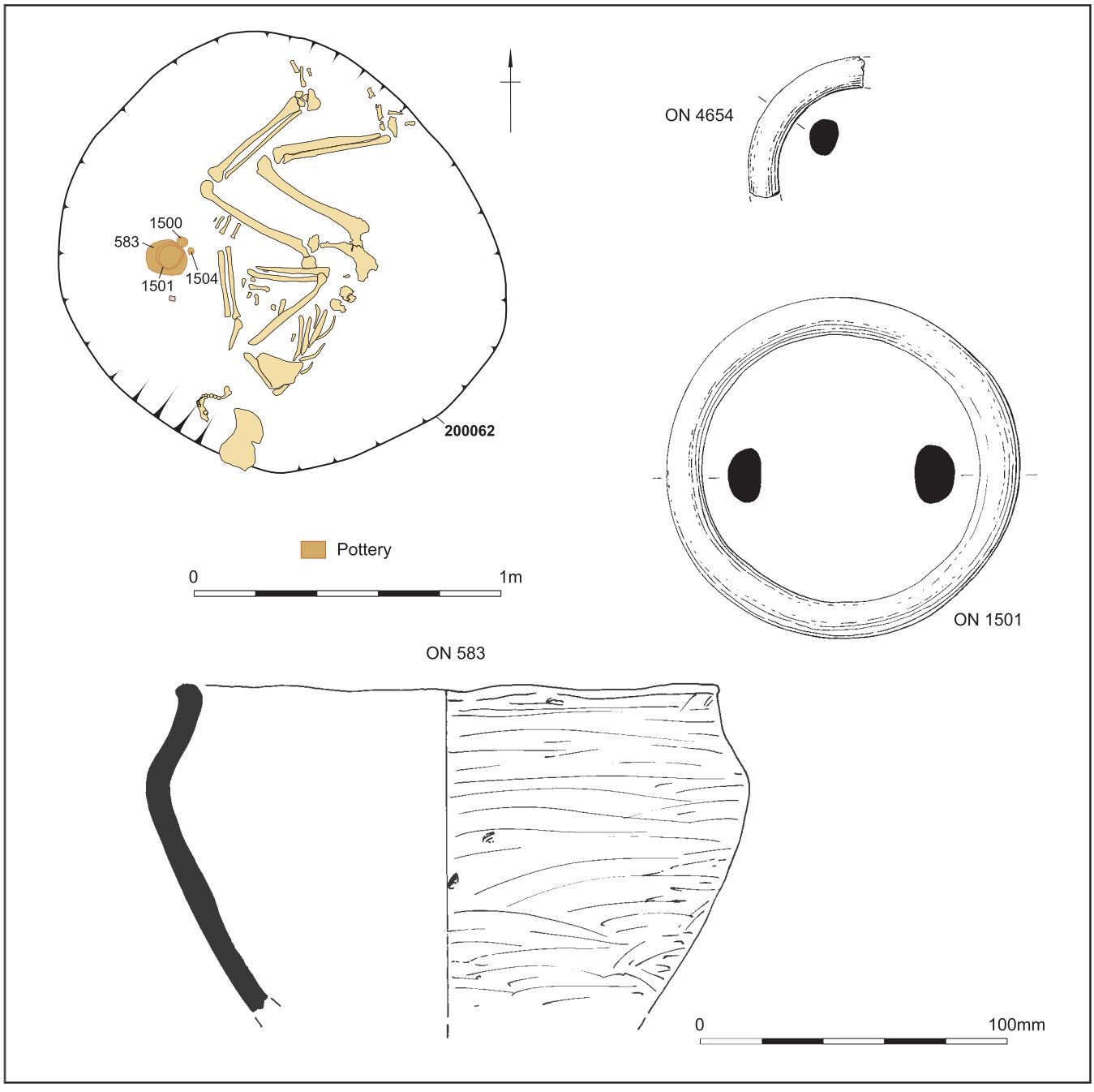


Fig 3.51 Early Iron Age pit burial 200066 (Zone 13)

Pl 3.29 Early–Middle Iron Age horse burial in pit 177193 (Zone 13; view from west)

into the early Roman period is described in Chap 4). Of particular interest is pit 177193 which contained the complete skeleton of a male horse (Pl 3.29, see Strid, Vol 2, Chap 14), that was radiocarbon dated to 390–200 cal BC (2230±35 BP, SUERC-40738). The pit was one of the earliest features amongst the dense complex of intercutting pits, quarries and graves in this area, and appears to have been dug specially for the burial of the horse. The pit was relatively large, rectangular in plan (approximately 2m long by 1m wide and 0.75m deep) with vertical sides and a flat base. The horse had been carefully laid out on its right side on the base of the pit; the legs folded up underneath it. It may be significant that none of the other features in this area had disturbed the horse burial. Further to the north-east, an isolated group of four intercutting pits (188027, 188033, 188038 and 159190) cut field boundary 182142. Each contained Early to Middle Iron Age pottery.

Grave catalogue

Grave 126127 (Burial 126128)

Fig 3.50

Grave: N–S, sub-rectangular with steep sides (except on the south) which slope shallowly to the flat base – 1.07 x 0.45m, 0.20m deep. Light brown silt loam fill with numerous chalk inclusions.

Human Remains: Burial is on right hand side, otherwise position unknown (only upper half survives). *c* 45% skeletal recovery. Adult 25–33 yr. ?Female.

Radiocarbon dating: 380–180 cal BC (2200±30 BP, SUERC-40289).

Pit 126141 (Burial 126143)

Not illus

Grave: Oval pit with steep sides and flat base – 3.10 x 3.00m, 0.81m deep. Five fills: 126142 and 126146 – loose mottled grey white chalk rubble on base; 126147 – mixed chalk and brown silt loam, few flint inclusions; 126144 – dark brown silty clay, numerous chalk inclusions, within which was burial 126143; 126145 – dark brown silty clay, numerous chalk and occasional flint inclusions.

Human Remains: Burial is oriented NW–SE, skull to north-west; unknown position. *c* 65% skeletal recovery. Neonate *c* 5–6 mth. ?Female

Grave Goods:

ON 1528: worked bone ?toggle, ?dog tooth.

ON 1532: 1 copper alloy ring/fitting fragment – oval cross section, traces of wear (ie, slightly thinner) at almost opposing points.

Quarry 159118 (Burial 159119 and 159124)

Not illus

Sub-square cut with moderately steep sides and concave base – 3.60 x 3.60m, 1.20m deep. Complex series of 30 fills, among which were several groups of disarticulated human remains.

Human Remains: 1) 159119 – not at base of pit, in chalk rubble at sides. *c* 10% skeletal recovery, heavily degraded, decalcified. Adult *c* 35–45 yr. Female. 2) 159124 *c* 21% skeletal recovery. Neonate 1–2 wk.

Pit 200062 (Burial 200066)

Fig 3.51

Grave: Sub-rectangular pit with steep sides and flat base – 1.45 x 1.40m, 1.02m deep. Four fills: earliest (200067: reddish brown silty clay) precedes skeleton, which was within 200065 (dark blackish brown silty clay – very organic and peat like); others post-date it.

Human Remains: Burial is flexed, on left side. *c* 90% skeletal recovery. Adult *c* 35–45 yr. ?Male. Also, 0.8g of redeposited cremated bone from a subadult/adult >13 yr.

Grave Goods:

All were placed in front of the torso with the pot inverted over ON 1501

ON 583: pot, bi-conical vessel with the shoulder at the mid-point. Rim absent and break ground smooth

ON 1500: spindle whorl, fired clay, tronconique form

ON 1501: shale armlet. A fragment of a second, much smaller armlet (ON 4654) may also have been associated with the burial, if not redeposited

ON 1503: rod/shank, Fe

ON 1504: spindle whorl, fired clay, tronconique form as ON 1500.

Grave 246011 (Burial 246012)

Fig 3.52

Grave: SW–NE, rectangular cut tapered to the north-east, with shallow sides and flat base – 1.50 x 0.50m, 0.42m deep. Two fills: 246018 – predominantly crushed chalk with some medium brown clayey silt; 246024 – compact redeposited chalk.

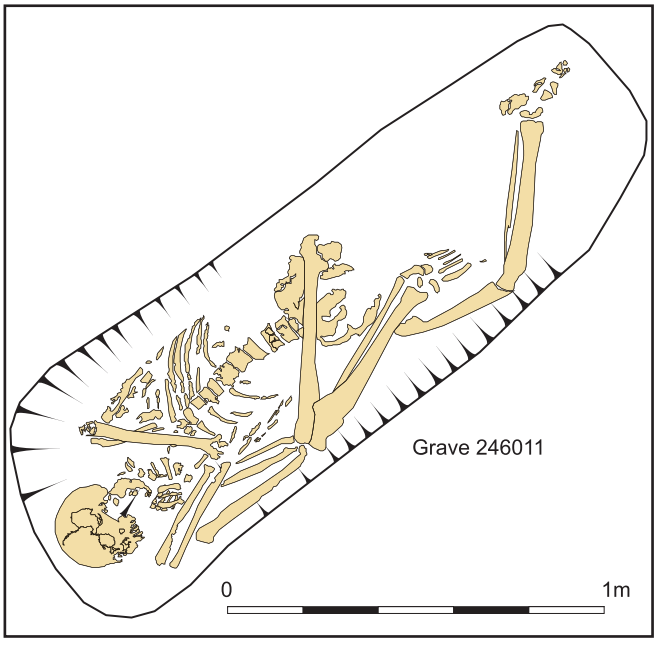


Fig 3.52 Plan of Early Iron Age grave 246011 (Zone 13)

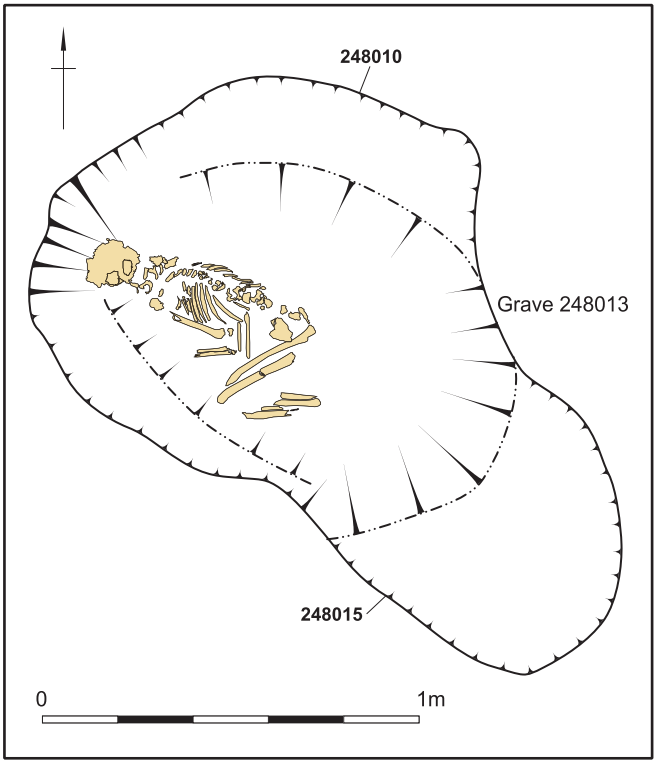


Fig 3.53 Plan of Early Iron Age grave 248013 (Zone 13)

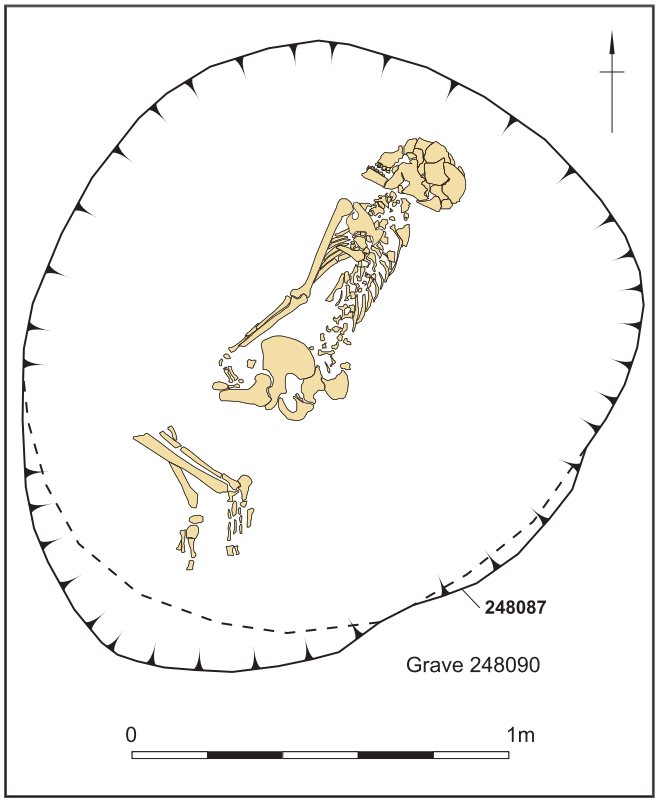


Fig 3.54 Plan of Early Iron Age pit burial 248090

Human Remains: Burial is on right hand side, right leg extended, left leg bent up, arms bent with hands by head. *c* 92% skeletal recovery. Adult >45 yr. Male.
Radiocarbon dating: 390–200 cal BC (2240±30 BP, SUERC-40301).

Grave 248013 (Burial 248012)
Fig 3.53
Grave: NW–SE sub-rectangular, with steep sides and flat base – 1.30 x 0.85m, 0.52m deep. Clay sandy loam fill, occasional gravel inclusions.
Human Remains: Burial is crouched, on right side. *c* 70% skeletal recovery. Juvenile *c* 7–8 yr.

Pit 248090 (Burial 248091)
Fig 3.54
Grave: Sub-circular pit – 1.94 x 1.42m, 0.16m deep. Flat base; otherwise largely destroyed by later feature. Dark brown silty clay fill, occasional chalk and burnt flint inclusions.
Human Remains: Burial is flexed, on right side. *c* 99% skeletal recovery. Subadult *c* 15–16 yr. Male.

Zone 15
A single gully (125057) at the east end of the zone contained five sherds of a pottery vessel of Early–Middle Iron Age type.

Zone 26
A single pit at the north end of the zone (240011) contained approximately a kilogram of Early to Middle Iron Age pottery. Some 110m to the south was a pair of parallel east–west ditches (201056 and 201057) likely to mark a trackway. The former was steep-sided and flat-bottomed, approximately 0.75m wide and deep; it is undated but is likely to be Iron Age by association. Ditch 201057 was smaller, 0.5m wide by 0.3m deep, and contained small quantities of Early Iron Age pottery. Other possible contemporary features include pit 236001 (containing 153g of Early to Middle Iron Age pottery).

Middle Iron Age

Zone 13

Trapezoidal Enclosure
In Zone 13, Middle Iron Age activity was again related to settlement in and around the trapezoidal enclosure (Fig 3.55). Fills of the enclosure ditch in the middle third of the sequence (approximately 0.7–1.4m down) contained predominantly Middle Iron Age ceramics, presumably correlating with contemporary occupation within the enclosure.

Pits
Ten pits within the interior of the enclosure contained ceramics of Middle Iron Age date (130038, 130039, 130040, 156166, 168084, 168135, 173188, 191255, 192039 and 203059). With the exception of 168135 (which lay adjacent to pit 168115 on the southern side of the enclosure at the western end, 168115 being the only feature within the trapezoidal enclosure with both Early to Middle Iron Age and Middle Iron Age ceramics in its fills, see above Fig 3.47), these features all lay in the eastern third of the enclosure, an area largely free of Early to Middle Iron Age features.

Each of these pits contained material that appeared to be domestic refuse (most commonly animal bone (predominantly cattle and sheep/goat), pottery and fired clay, and a tiny amount of iron smithing slag), while both 156166 and 173188 contained small quantities of

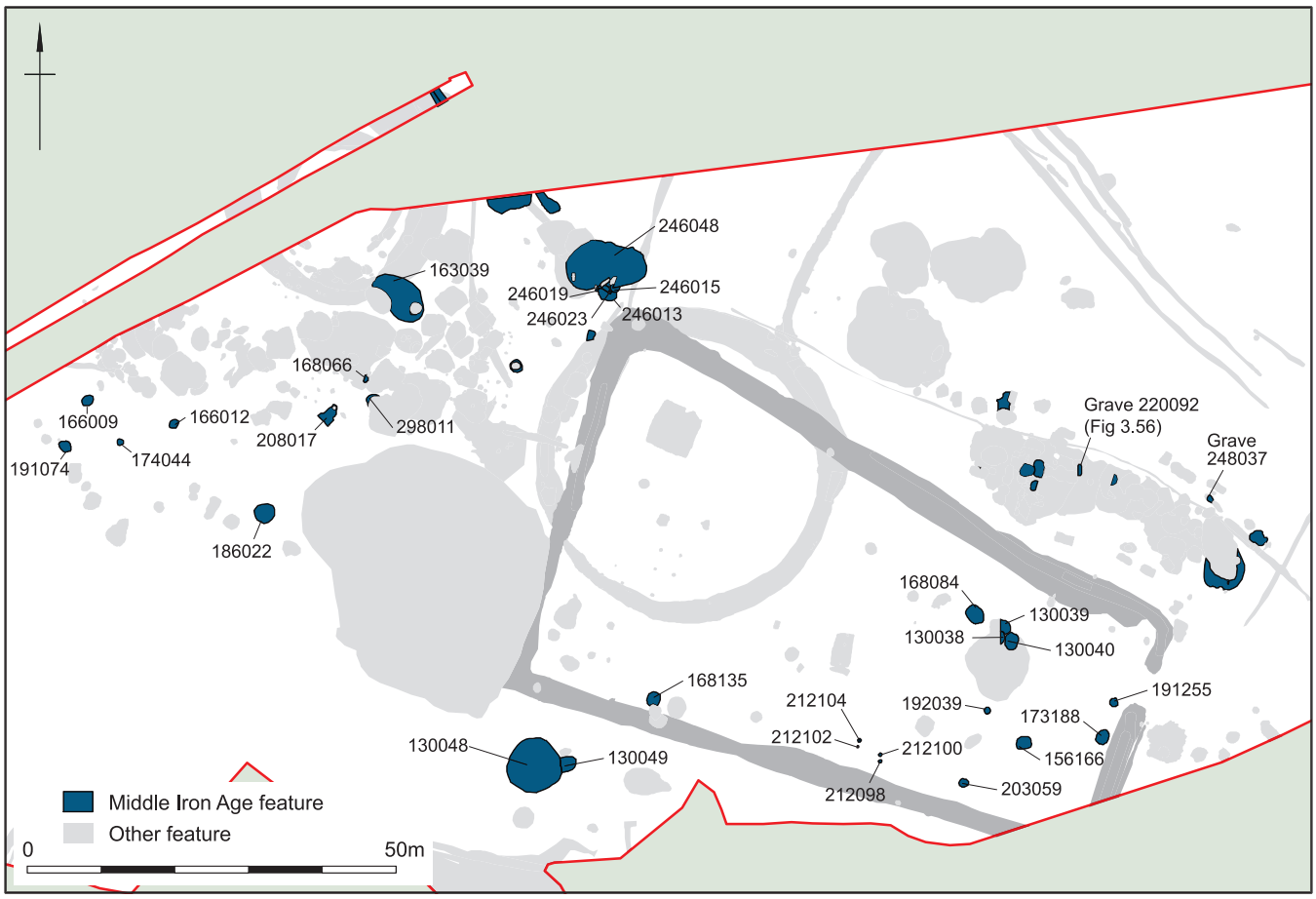


Fig 3.55 Plan of Middle Iron Age features around trapezoidal enclosure 134099 (Zone 13)

redeposited human bone. Residues on sherds in 173188 were radiocarbon dated to 410–200 cal BC (2290±35 BP, SUERC-40478).

Postholes

Four postholes in two pairs (212104/212102 and 212100/212098) were situated just west of the zone of pits. Posthole 212104 contained Middle Iron Age pottery and fired clay.

Pits and other features outside the enclosure

South of the enclosure, two pits (130048 and 130049) lay adjacent to its southern boundary, 130048 particularly substantial at almost 2m deep. Neither contained large quantities of datable material, but both had exclusively Middle Iron Age ceramics in their fills and quantities of other material comparable to that from the pits of the same date within the enclosure.

In the heavily pitted area west of the enclosure, Middle Iron Age activity was very much sparser than in the preceding period. Five pits (166009, 166012, 174044, 186022 and 191074) lay within the area defined by the lines of Early to Middle Iron Age pits at the south-western end of this area, while another four (163039, 168066, 208017 and 298011) lay in the heavily quarried area. Four small intercutting features (246013, 246015, 246019 and 246023) and a much larger quarry pit (246048) lay beyond the north-west corner of the trapezoidal enclosure. The contents of these pits were comparable to those of other contemporary features, and 166009 and 246015 contained single fragments of redeposited human bone.

A further more extensive cluster of features lay to the north of the trapezoidal enclosure between the enclosure ditch and the boundary marked by gully 134104. This area (some 40m long and 13m at its widest) was very heavily pitted, with a very extensive sequence of intercutting shallow rubbish and quarry pits (see Fig 3.47). Not very many of these 96 features contained datable material, but those that do indicate a sequence beginning in the Early to Middle Iron Age and continuing intermittently into the early Roman period. The majority of the features dated by their ceramics to the Middle Iron Age are pits. The datable examples lie at the western end of a 26m-long line of 20 similar intercutting features arranged parallel to gully 134104, most or all of which may be contemporary. At the western end of this line, a further seven pits are aligned at right-angles, probably part of the same group. Immediately north of the line, grave 220092 was dated to the Middle Iron Age by its ceramics and a radiocarbon date of 390–200 cal BC (2230±30 BP, SUERC-40299) was obtained from human bone.

Situated north of the boundary marked by gully 134104 was an undated grave, 248037 (see Fig 3.55). Other graves and features in the immediate vicinity are of Roman date, but the position of this inhumation suggests that it was a prehistoric interment, perhaps broadly contemporary with grave 220092.

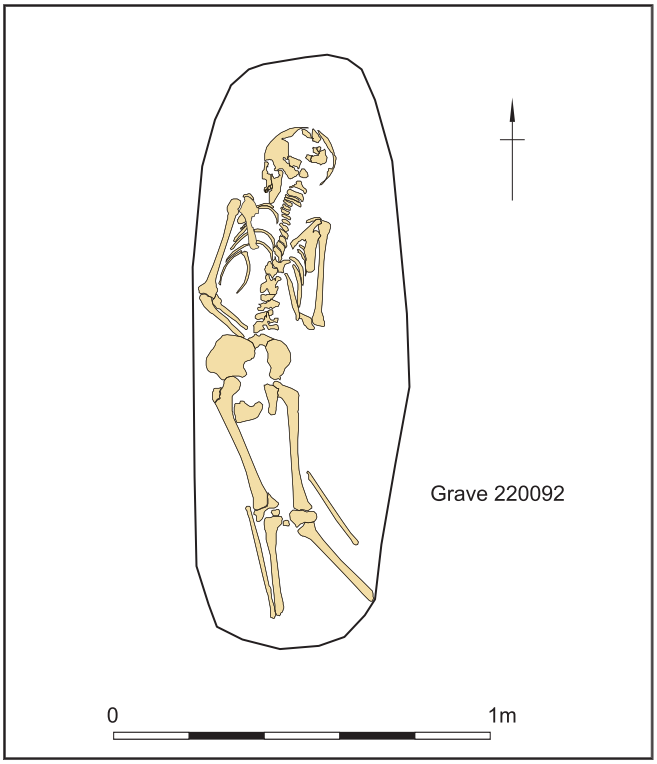


Fig 3.56 Plan of Middle Iron Age grave 220092 (Zone 13)

Grave catalogue

Grave 220092 (Burial 220093)

Fig 3.56; Pl 3.30

Grave: N–S, sub-rectangular with steep sides and flat base – 1.50 x 0.55m, 0.25m deep. Brown clayey silt fill with frequent chalk frags.

Human Remains: Burial is prone. *c* 96% skeletal recovery. Subadult *c* 14–16 yr.

Radiocarbon dating: 390–200 cal BC (2230±30 BP, SUERC-40299).

Grave 248037 (Burial 248039)

Not illus

Grave: NW–SE, irregular sub-rectangular cut, with sloping sides and rounded base – 0.90 x 0.66m, 0.19m deep. Brown clayey silt fill.

Human Remains: Burial is flexed. 26% skeletal recovery. Subadult/adult *c* 16–25 yr. ?Female.

Zone 19

Iron Age

Approximately 10m east of the Late Bronze Age enclosure in Zone 19 (see above Fig 3.16) was a rectangular post-built structure (267045), aligned WNW–ESE and measuring approximately 5m by 3m (Fig 3.57). The structure comprised two parallel rows of four postholes, some of which contained pottery of mid- to Late Iron Age date. A single sherd of Roman date may represent the latest stage of infilling of the disused postholes. The structure post-dates the construction and early use of the segmented enclosure but may have been contemporary with its continued use or at least with continued awareness of its presence. The upper metre or so in the eastern ditch segment (126230) contained some

Pl 3.30 Middle Iron Age prone burial 220093 (Zone 13; view from west)

Middle–Late Iron Age pottery (along with a greater quantity of Early–Middle Iron Age material), though no Iron Age material came from the other two segments, perhaps reflecting their smaller size and greater distance from the structure. The function of the post-built structure is uncertain, though one possibility is that it represents an above ground storage structure, of the type commonly found in Iron Age settlements, rather than a domestic structure.

A metalled trackway (252036) was aligned NE–SW and extended across Zone 19 in between the segmented enclosure and the post-built structure; it may have been related to the use of either or both. The metalled surface lay within a shallow hollow and extended for 28m from the southern limit of excavation and petered out (perhaps truncated by ploughing) just beyond the enclosure and structure; it was not identified in the narrower excavation strip to the south. At its widest point trackway 252036 measured 3m across and the metalled surface (of gravel and some larger flints) was approximately 1m wide and less than 0.1m thick. No artefacts were recovered from it, so its dating is not conclusive, but spatially, a later prehistoric date seems most probable.

Situated 40m to the south-east of post-built structure 267045 was another of very similar appearance (195120), along with five more postholes in an adjacent cluster. The structure was aligned ENE–WSW and was 4m long and 1.5m wide. Small amounts of pottery from five of the postholes gave a Late Iron Age date for their infilling and presumably for the disuse phase of the structure. North-east of the structure was a group of five further postholes, although their spatial arrangement formed no coherent structure outline. Similarly, three of these postholes contained pottery dating their infilling to the Late Iron Age.

Some 13m north-east of structure 195120 was a large, somewhat irregular feature of probable Middle Iron Age date. The cut (205102) measured 3m long, 2.5m across and was 0.2m in depth. Its profile and base were undulating and irregular and none of the artefacts recovered from the fill (small amounts of residual worked flint, animal bone, pottery and shell) provided further clues to its function. Feature 205102 cut an undated pit (205104, not shown) and there is a slight possibility that it was a sunken-featured building, though the evidence is

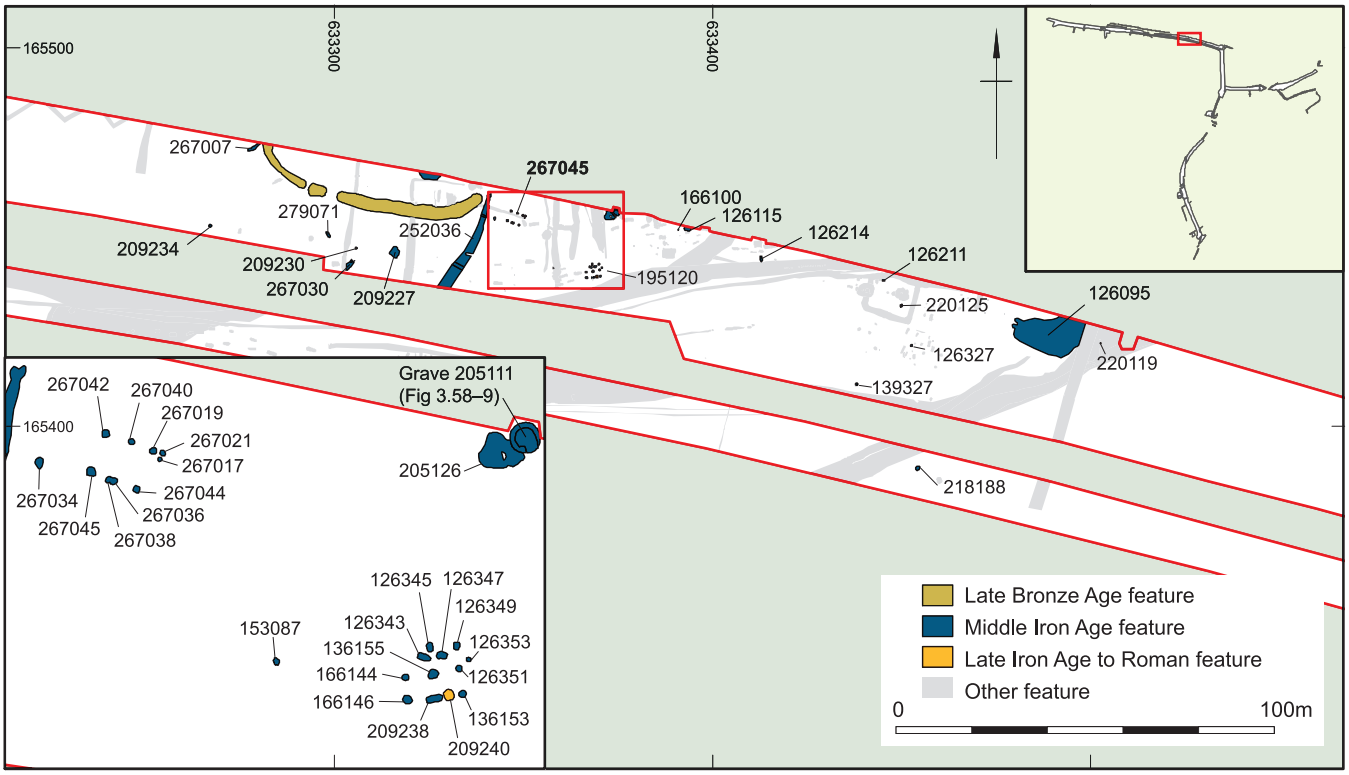


Fig 3.57 Plan of Iron Age features in Zone 19

not convincing. The eastern side of feature 205102 was cut by a large circular pit with a bell-shaped profile (205106) (Fig 3.58). This measured 3m in diameter and 0.9m in depth. The pit may have originally been used for storage, and following this for refuse disposal with pottery, flint (both Late Bronze Age worked and burnt, unworked), animal bone and fired clay recovered from the fills; there were, however, relatively few charred plant remains. An inhumation burial (burial 205108) was made in the pit and was dated to 410–200 cal BC (2280±30 BP, SUERC-40712) (Pl 3.31).

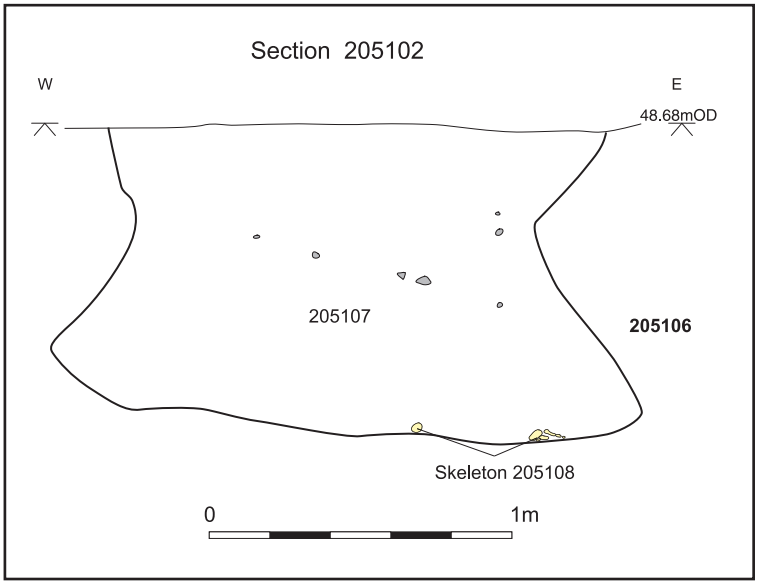


Fig 3.58 Section of pit 205106 (Zone 19)

Grave catalogue

Grave 205111 (Burial 205108)

Fig 3.59; Pl 3.31

Grave: NW–SE, in circular pit (205106) with bell-shaped sides and flat base – 3.0 x 2.0m, 0.90m deep (base at 47.7m OD). Very dark brown silty loam fill, occasional flint gravel inclusions.

Human Remains: Burial is supine with legs flexed to south. *c* 93% skeletal recovery. Adult *c* 45–55 yr. Male.

Grave Goods:

ON 1808: polished and pierced cattle carpal, possible amulet.

Radiocarbon dating: 410–200 cal BC (2280±30 BP, SUERC-40712).

Pit 126115 was situated on the northern edge of Zone 19, 18m to the east of pit 205106. This pit was sub-circular in shape with steep, straight sides and a flat base, which slightly sloped to the east. It measured 1.9m in diameter and 0.5m in depth. It contained pottery of mid- to late Iron Age date, animal bone and a small amount of fired clay suggesting a function as a rubbish pit.

Pl 3.31 Early–Middle Iron Age grave 205111/pit burial 205108 (Zone 19; view from south-east)

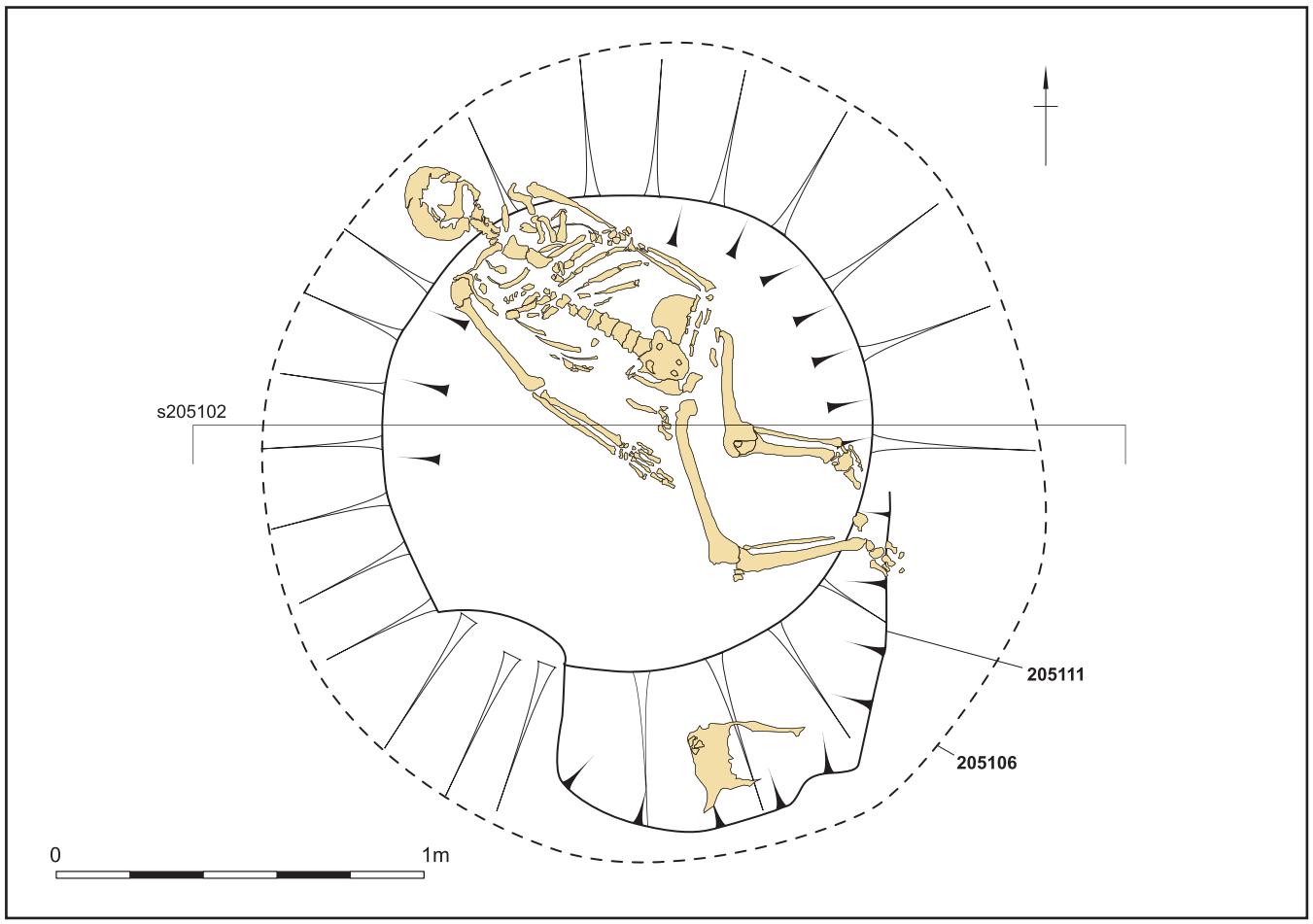


Fig 3.59 Plan of Middle Iron Age pit burial 205111 (Zone 19)

In addition to the possibility that trackway 252036 is of later prehistoric date, it is also conceivable that several trackways to the east of this, running along the crest of the chalk ridge, that have been assigned a Roman date (126226, 126277 and 193119, see Chap 4), also had their origins in the Iron Age.

Zone 22

Although the dating evidence is sparse, it is likely that most of the features in Zone 22 were Iron Age in date. The gullies and ditches were associated with several phases of field system, with possible evidence for animal husbandry represented by a small horseshoe-shaped enclosure in the corner of one of the fields (Fig 3.60). However, the shallow depth of most of the features makes the confident assertion of stratigraphic relationships difficult.

The horseshoe-shaped enclosure (290420) was a shallow feature which although clear in plan did not show up as a cropmark. The enclosure had a maximum diameter of 19m, enclosing an area of 270m² with a wide opening on the southern side. The eastern and northern sides were recut on several occasions (Fig 3.61). The size of the ditches (and an accompanying bank) would not have been sufficiently substantial to function as a boundary on their own and therefore there may have been an associated hedge to contain animals. A component element of the eastern side of this enclosure, ditch 290585, produced some disarticulated human bone (layer 290297).

Immediately west of the enclosure was a north-south aligned ditch 193083. Parallel to this and some 7m further west was a more substantial but shallow north-south aligned ditch (290571) which, like the horseshoe-shaped enclosure, had been recut on a number of occasions (Fig 3.61), and represented the western boundary of Iron Age activity in this area. It is possible that with 193083 this may have formed a trackway, rather than simply forming a sequence of boundary ditches. To the east of the enclosure were two parallel east-west aligned ditches (290573 and 290574), 1.5m apart, which extended over a distance of 150m and apparently ended at Laundry Road, as they did not extend into Zone 21 to the east. Ditch 290574 cut the latest phase of the enclosure ditch but also terminated there, suggesting that the features were broadly contemporary. The parallel ditches may have represented two phases of field boundary, or perhaps a narrow trackway. Further east, a north-south aligned ditch (290572) cut both ditches and may represent a later Iron Age sub-division of the landscape. The pottery from all the ditches was dated to the Middle to Late Iron Age and was accompanied by a small amount of animal bone, shell and worked flint.

Ditches 290575 and 290576 were aligned WNW–ESE and the northernmost of the two (290576) was cut by ditch 290573 and contained pottery of Middle to Late Iron Age date. The two ditches may be the

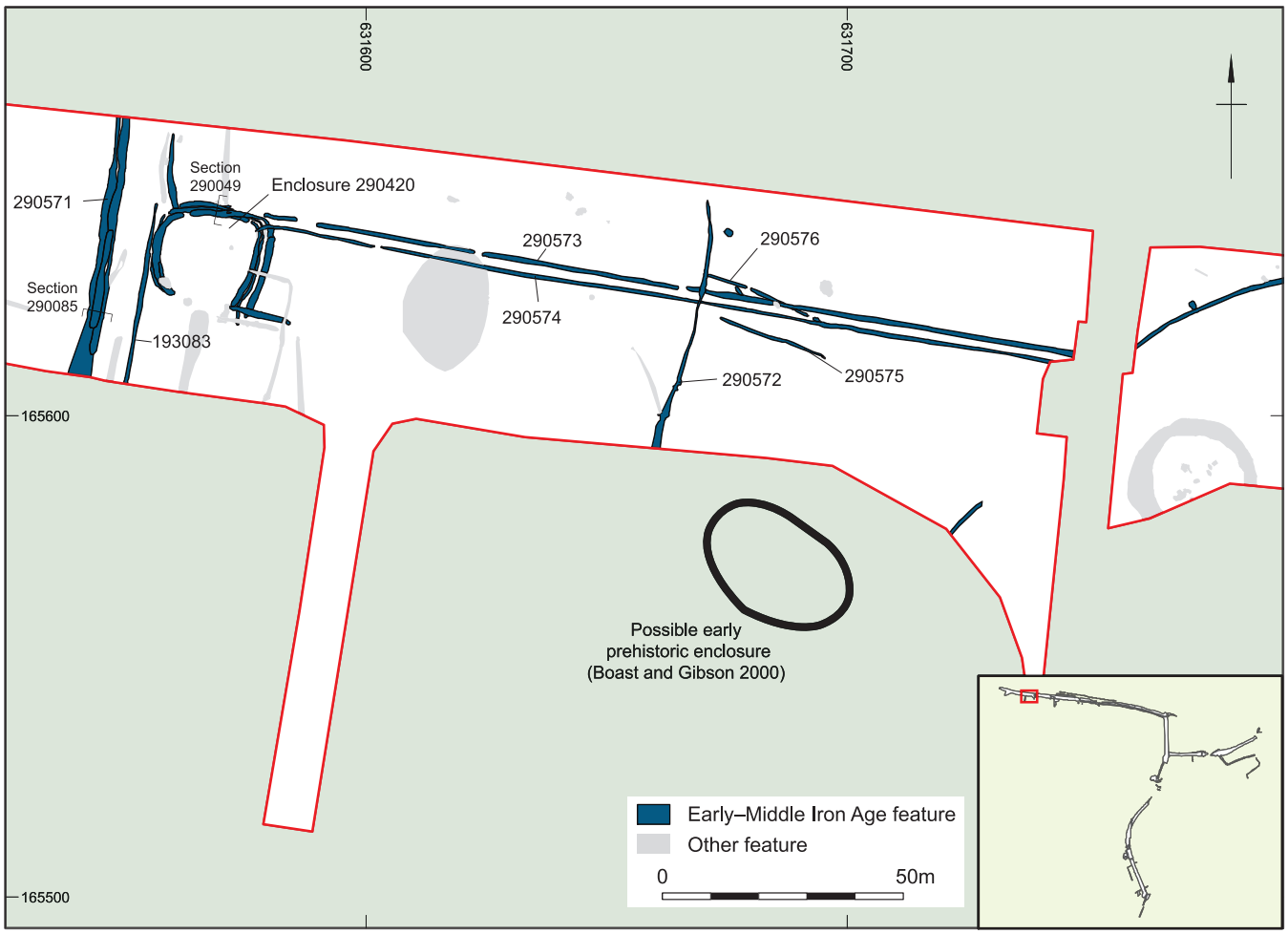


Fig 3.60 Plan of Iron Age features (Zone 22)

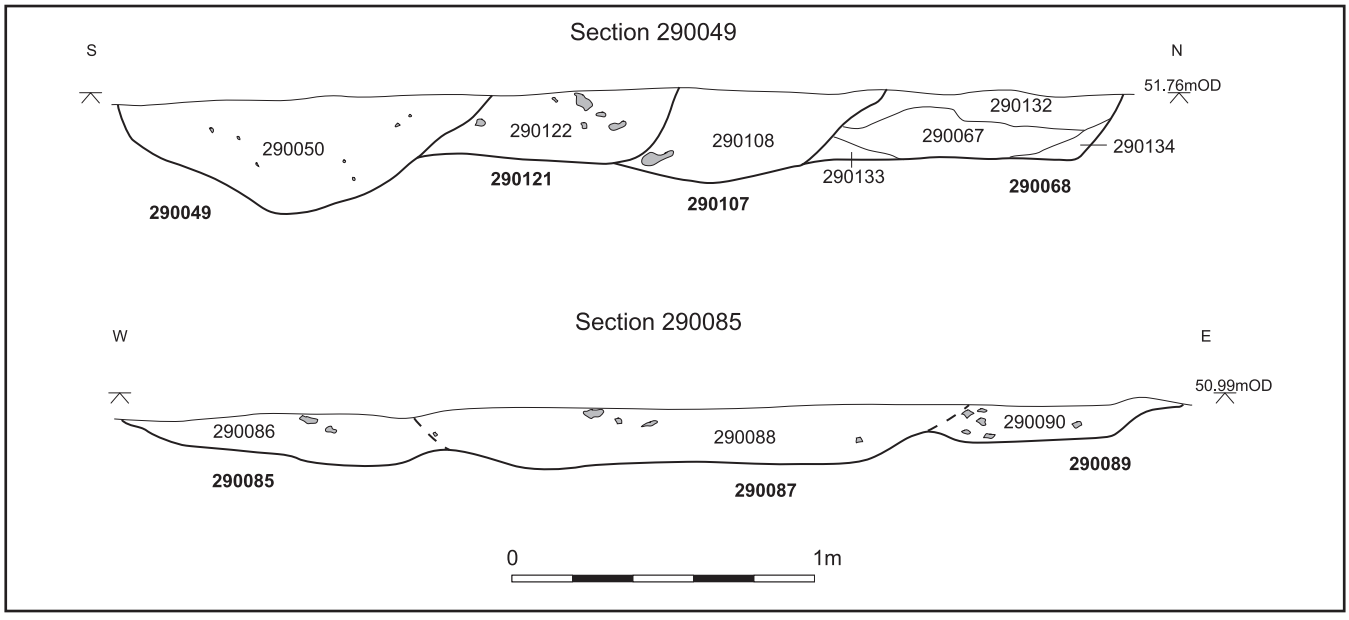


Fig 3.61 Section of ditches 290420 and 290571 (Zone 22)

remnants of a trackway, perhaps part of an earlier field system. The two parallel ditches were on a different alignment to the field system described above, but appear to be also of Middle to Late Iron Age date, suggesting an episode of land reorganisation at some time in this broad period.

The eastern extent of the Middle to Late Iron Age activity may have been defined by an early precursor to Laundry Road which follows a small, shallow dry valley, as the few linear features in Zone 21, to the east of this, were on a different alignment to those discussed above. The horseshoe-shaped enclosure may, therefore,

have been located at a junction of fields and trackways, but there was no evidence for settlement in the immediate vicinity and there was little domestic debris deposited in the ditches, which suggests that the associated settlement lay at some distance, perhaps the nearest being that identified at the Tothill Services site (Canterbury Archaeological Trust 2004; Gollop and Mason 2006), at the west end of Zone 23 and adjacent to Zone 24, approximately 300m away. However, a little further distant to the south-east, south of Zone 21, is a substantial, roughly sub-rectangular enclosure (Scheduled Monument (Kent 262)) of Bronze Age or perhaps more likely Iron Age date, identified from cropmark evidence (Fig 3.17). Though both the date and function of this enclosure remain uncertain, it may in some way have been related to the horseshoe-shaped enclosure in Zone 22.

A single shallow pit (290001, see Fig 2.20) of Late Iron Age date was found close to the north-eastern side of barrow 193123 containing a truncated but nearly whole pot (ON 915) placed on the base of the pit. The pit was sub-circular in shape and measured 0.8m in length, 0.57m in width and 0.17m in depth. It may have been deliberately located here, respecting the earlier monument, and notably outside the terminal to the northern end of the original penannular ditch.

Zone 24

The probable northern and eastern limits of the Middle Iron Age settlement excavated on the Minster Services site were found in Zone 24 (Gollop and Mason 2006), which was directly north of that site. The evidence comprised several clusters of postholes, similar to groups found on the Services site, although no pottery was recovered from the postholes in Zone 24 (Fig 3.62). The most coherent group formed a probable six-post structure (195121) measuring approximately 4 x 2.5m. Pit 198111 lay 100m to the south-east and contained 60 sherds of Middle to Late Iron Age pottery.

Discussion by AP Fitzpatrick

The Iron Age landscape

The Iron Age is distinguished by a marked increase in the number of substantial, and presumably more

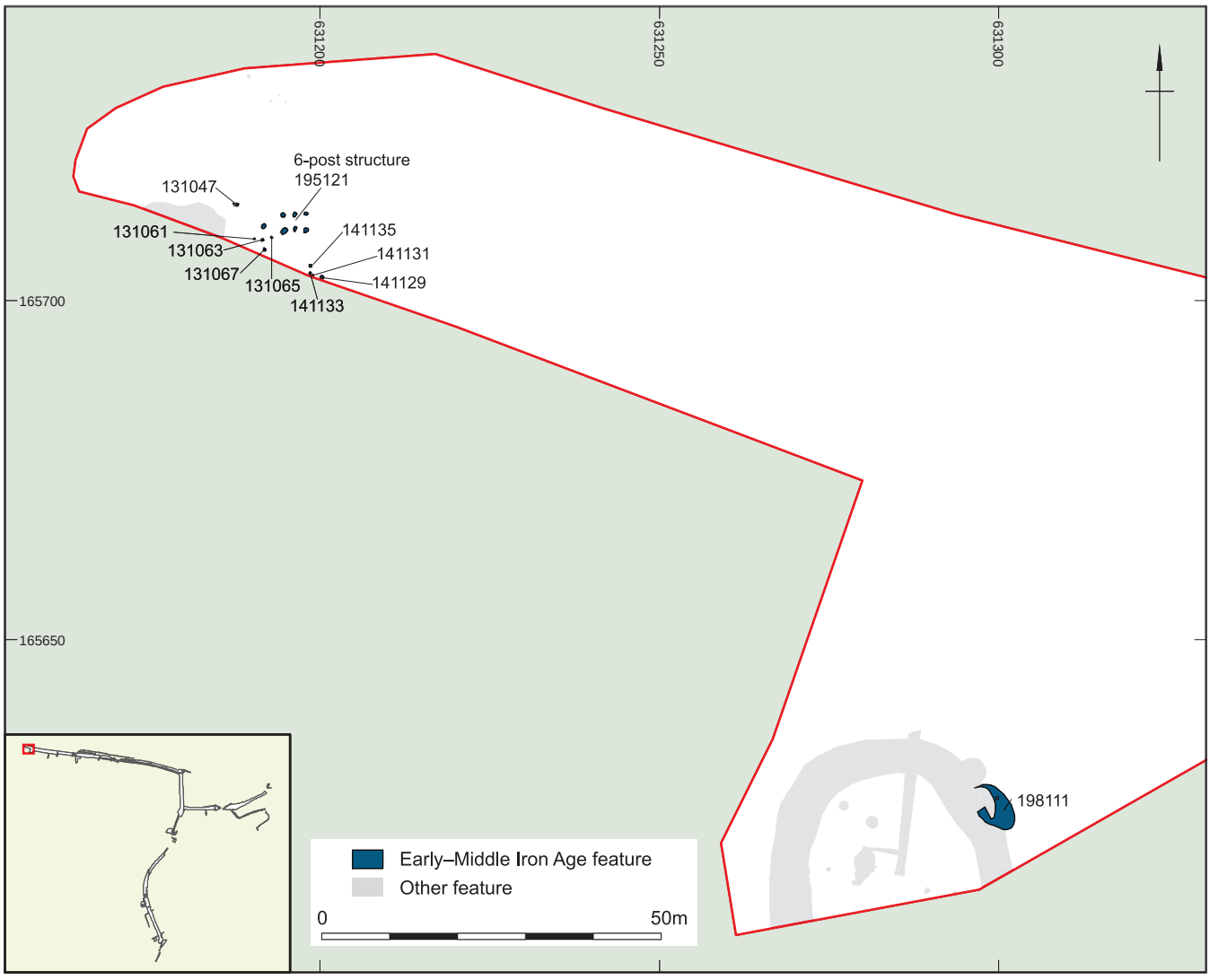


Fig 3.62 Plan of Iron Age features in Zones 23 and 24

permanently occupied, settlements, and the extensive division of the landscape with compounds and droveways. The Middle Bronze Age field systems, which may have largely fallen out of use in the Late Bronze Age, were superseded completely in the Iron Age. New field systems were established in Zones 7 (Cottington Hill), 10 (Sevenscore), 13–14 (Cliffs End spur), 17 (Foads Hill) and 22 (Telegraph Hill), and while they are individually smaller than the major field systems set out in the Middle Bronze Age, cumulatively they are more extensive; extending further to the east and to the north up the slopes of Sevenscore. Trackways and droveways are also much numerous than in the Late Bronze Age, suggesting that in the Iron Age the landscape was divided more systematically. Iron Age settlements were also more numerous and longer lived than their Bronze Age predecessors. Whereas in the Bronze Age farms seemed to be located in the fields, in the Iron Age the reverse is true with field systems, trackways and droveways being more strongly associated with the farms. While this might seem unremarkable, it represents a significant contribution to the archaeology of the region as evidence for Iron Age settlements and fields has generally been rare (eg, Champion 2007a, 299–302).

Three major settlements were excavated in Zones 6, 12 and 13. Parts of other settlements were examined in Zones 4, 7, 10 and 19. The discovery of an isolated pit with settlement-derived material in Zone 3 indicates the existence of others in the immediate proximity, while an Iron Age settlement is also known immediately adjacent to Zone 24 at Tothill Street (Gollop and Mason 2006). An Iron Age cemetery was found in Zone 12 and burials were also found within the settlements in Zones 6, 13 and 19.

This evidence is discussed below according to phase: Earliest Iron Age (8th–6th centuries BC), Early–Middle Iron Age (5th–4th centuries BC), and Middle–Late Iron Age (4th–1st centuries BC). In the case of Zone 6 this means that most of the stratigraphic evidence is considered in two separate sections: i) Early–Middle Iron Age and ii) Middle–Late Iron Age, the latter of which continues into the middle of the 1st century BC.

Farms and fields

Earliest Iron Age

Very little activity of this date can be identified, partly because this phase is relatively short lived, possibly lasting for only two centuries, but it is represented by groups of pottery that are quite distinct from the preceding Late Bronze Age Plain Wares. A small quantity of pottery was found in Zone 4, from features including ditches 177304 and 312029 (which recut Late Bronze Age ditch 312026), and pit 141191 (Fig 3.22). Two bowls from the pit were red-finished, perhaps using haematite, as was a vessel from enclosure ditch 201103 in Zone 7. In Zone 13 a length of timber palisade was found, perhaps established at the very end of the Late Bronze Age and associated with the Bronze Age

Pl 3.32 North side of Early–Middle Iron Age trapezoidal enclosure 134099, cutting Early Bronze Age ring-ditch 134100 (Barrow 2) lower left and Late Bronze Age/Early Iron Age palisade ditch 134097 upper left; note Roman quarry pit complexes 247004 and 292001 upper right (Zone 13; view from south)

enclosure and field boundaries to the east in Zone 14 (see above, Fig 3.15). The palisade ditch, 134095, which was at least 50m long, had originally contained substantial timbers (Fig 3.15; Pl 3.32). A single, unabraded, sherd of an Early Iron Age bowl was found in the primary fill suggesting that the palisade was built in the 7th–6th centuries BC. Not far to the south of the palisade in the north of Zone 26 a single pit (158029, Fig 3.46) contained at least three vessels of this date along with animal bone, shell and fired clay, suggesting the presence of a settlement in the vicinity. It is possible that the palisade could have been associated with this settlement.

Early–Middle Iron Age

Early–Middle Iron Age settlement activity was found in Zones 3, 6–7, 13 and 19. There is a single sherd from Zone 10 that hints that the Middle Iron Age activity there began at the very end of this phase.

Zone 3

A tree-throw hole or irregular pit (151001) in this zone contained Early–Middle Iron Age pottery, cylindrical pedestals and a triangular brick from salt making, and a quern stone; all indicate the presence of a settlement in the vicinity. In contrast the evidence from Zone 6 was much more extensive, representing a small settlement.

Zone 6–7

This settlement was extensive and long lived (Figs 3.24–7; Pl 3.33). It originated in the 6th–4th centuries BC and was occupied until the 1st century BC and beyond. The earliest evidence for Iron Age activity (phase I, Fig 3.24) is the 50m-long metalled trackway 170111, a trackway to the south which is represented by ditches 244251 and 249101, and a possible boundary (190432–3). The metalled trackway was substantial and in places it was up to 12m wide. Two enclosures defined by ditch 169002 were associated with it at the north of the area. A well, 170085, within the southern enclosure has been tentatively dated to the Late Bronze Age but a few sherds of pottery suggest that it continued in use into the Early Iron Age. The southern ditched trackway was later added to and partly superseded by other similar features comprising 302129 and 302131, 249096–7 and 170033–4. Although these are stratigraphically later (phase II, Fig 3.25) it seems likely that they all belong to what was essentially a single phase.

No buildings were identified in the north of Zone 6, only a cluster of pits either side of ditch 170044 (eg, pit 262167) and a possible waterhole (254056) to the east of the metalled trackway (Fig 3.26). A few pits in the south of Zone 7 may be contemporary with these features.

All the buildings were in the centre or south of Zone 6 and although none can be dated before phase III (Fig 3.27) it seems likely that some were contemporary with the phase 1 and II trackways. In phase III an enclosure defined by ditch 170170 was added to the south of trackway 249096–7. Another enclosure, defined by ditch 190461, was built in the south of the zone, and ditch 190451 to its west may also have been part of an enclosure (Fig 3.32).

All the circular buildings are post-built. Roundhouses 169003, 169010, 190471 and 190499 were between 10–15m in diameter, and in some cases appeared to be associated with clusters of small circular pits. Roundhouses 190471 and 169010 stood within ditched enclosures, and it is possible that the other roundhouses stood within fenced compounds as fence lines were identified elsewhere in the zone (eg, 190508 and 190749). Two possible smaller circular buildings, 190502 and 320043, had estimated diameters of 6m and 7m respectively. It seems likely that some four- or six-post buildings, eg, 326023 (Fig 3.32), also belonged to phase III.

Pl 3.33 General view of Iron Age – Romano-British settlement in Zone 6; note boundary ditch 300012/3 and 170178 crossing diagonally in foreground (Zone 6; view from south)

Zone 13

An Early–Middle Iron Age enclosure and associated features were found in this zone, the main element being a trapezoidal-shaped enclosure, the north-west corner of which was constructed across a large part of Early Bronze Age ring-ditch 134096 (Barrow 2), which presumably was levelled and the ditch largely infilled at this time (Figs 3.46–7). There are extensive clusters of intercutting pits to the west and north of the trapezoidal enclosure but the excavation did not extend far enough to the south or east of the enclosure to establish if there were also clusters of pits there. The long sides of the enclosure were just over 80m long and aligned approximately ESE–WNW. There is a single entrance in the shortest, eastern, side which faced directly onto the only surviving building in the enclosure, 174060. There were few finds from the earliest fills of the enclosure ditch and the earliest pottery, of Early–Middle Iron Age date, occurred in small quantities in the latest of the primary fills. The secondary fills contained much larger quantities of Middle Iron Age pottery. This suggests that the enclosure ditch was dug between the 5th and 4th centuries BC.

Sunken-featured building 174060 was sited in the north-west corner of the enclosure (Fig 3.48; Pl 3.34). As its western and northern sides were parallel with the enclosure ditch it seems likely that the enclosure and building belonged to the same phase. The building lies at the far end of the enclosure from the ESE-facing entrance but it is directly opposite it, the entrance being located toward the north end of the eastern side of the enclosure. However, the ramped entrance to building 174060 did not face the eastern entrance to the enclosure, instead it faced south.

The building was 6.5m square. On excavation the base of the building lay 0. 8m below the surface of the undisturbed natural chalk and so it must originally have been over 1m below the ancient ground surface. The ramp leading down to the floor is on the southern side. There were postholes in the south-east and north-west corners and it is possible that there were originally substantial postholes in each corner to help support a superstructure. The narrow gully at the base of the walls may have been a bedding trench for timbers. The three postholes next to the ramp down into the building formed part of an entrance structure. No finds are certainly associated with the use of the building which was deliberately filled in using dumped material that contained pottery of Early to Middle Iron Age date. Amongst this material was part of a human skull of Early Bronze Age date. Most of the features within the enclosure contained pottery of Early–Middle Iron Age type, with just one containing a separate and stratigraphically later deposit of Middle Iron Age pottery. This suggests that the infilling of the building was contemporary with the appearance of larger quantities of Middle Iron Age pottery in the secondary fills of the enclosure ditch.

Pl 3.34 Early–Middle Iron Age sunken-featured building 174060, in north-west corner of trapezoidal enclosure (Zone 13; view from east)

There were relatively few contemporary features within the enclosure and most were to the south of the building. Pits 200026 and 173005 and four-post structure 1746084, possibly a granary, lay to the south of building 174060. Further south was a possible east-west aligned fence line or boundary (postholes 297004, 297002 and 130071), and then a group of seven pits immediately next to the enclosure ditch (9125078 to 168115). There were three isolated pits of Early–Middle Iron Age date in the northern part of enclosure. This suggests that how areas within the enclosure were used was clearly defined. This scarcity of features within the enclosure contrasts with the large quantities of finds in them, which include a ring-headed iron pin (from pit 248027, ON 4575, Cat. No. 14; Vol 2, Fig 3.7, 14), animal bone, shell, pottery, hearth lining and briquetage.

The mass of pits and quarries to the north and west of the enclosure (Figs 3.46 and 3.49) also contained large quantities of apparently contemporary domestic material suggesting extensive activity to the north and west of the enclosure, particularly to the north. Apart from two large pits, 130048 and 226001, there appears to have been less activity to the south but the excavation did not extend far in that direction.

To the north of the enclosure a narrow, sinuous, gully (134104) ran almost parallel to the enclosure ditch (Fig 3.47). Between it and the enclosure was a mass of intercutting pits, while north of the gully there was a row of at least four pits, 150030, 191221, 191225 and 191229, and probably also 248034. There were also clearly defined rows of pits to the north-west of the enclosure, 186033 to 173013 and 186020 to 166007 (Fig 3.49). It is possible that these also respected boundaries and in one case the concentration of postholes and pits might reflect the presence of a building. Some of the undated postholes amongst the pit cluster to the north-west of the enclosure may be parts of six- or four-post structures. Some small fragments of fired clay from Middle Iron Age pit 248087 had a surface deposit that could be some sort of whitewash and these presumably came from a domestic building.

The enclosure in Zone 13 has some unusual characteristics and for this reason it is considered more fully below.

Zone 19

There was also evidence for a settlement of Early–Middle Iron Age date in the vicinity of Zone 19 in the form of a six-post structure (267045), which contained pottery of mid–Late Iron Age date, and two pits (Fig 3.57). The building was close to an undated metalled trackway, 252036, that is considered likely to be of prehistoric date (Fig 3.57). To the east a shallow hollow (205102) was cut by a pit 205106 that contained domestic refuse including a large assemblage of Early–Middle Iron Age pottery, much of which was of high quality, however, an inhumation burial (205108) in the base the pit (Fig 3.59; Pl 3.31) was radiocarbon dated to 410–200 cal BC (2280±30 BP; SUERC-40712) suggesting that at least some of this material is residual. A pierced and polished cattle carpal (ON 1808) was recovered from the pit and may have been an amulet. Further to the east again was pit 126115, which also contained domestic refuse and pottery of Iron Age date. The quantity and range of finds in the features in Zone 19 suggests the presence of a settlement nearby.

Middle–Late Iron Age settlement

Zones 4 and 5

In Zones 4 and 5 a small settlement was spatially discrete from the much larger one slightly further to the north in Zone 6 (Fig 3.22). In Zone 4 two parallel east-west aligned ditches 190272–3 may represent a 10m wide trackway, perhaps continued to the west by ditch 155/110 on the Weatherlees Pond site. Two four-post structures (193170 and 252185) stood between the two ditches in Zone 4 with two possible eaves drip gullies for buildings (190280 and 190281) to the south. Two north-south ditches to the north of the large Late Iron Age ditch 190288 might be associated with the trackway. Features to the north of ditch 190288 were a possible post-built roundhouse and a four-post structure (252245) and another probable four-post structure between them. To the west in the Weatherlees Pond excavation there was at least one pit (114) and there was also a group of pits towards the east of Zone 4. These all contained domestic refuse as did two large pits in Zone 5 (147183 and 254111).

There is a little evidence for more than one phase of activity in the settlement. In Zone 4 the east-west ditches of the trackway appeared to be cut by a north-south ditch (190275) and if the ditches do represent a droveway, the two four-post structures that stood in it are unlikely to be contemporary. The possible roundhouses were also built in different ways; one is post-built and the other two are defined by gullies, and these two styles are again unlikely to be contemporary. Immediately to the north in Zone 6, post-built roundhouses were the earlier style of building. The material found in these features, including charred grain, animal bone, pottery and fired clay, some of which is from salt making (in pits 182246 in Zone 4 and 254114 in Zone 5), is all typical of domestic refuse.

While the appearance of this settlement in Zones 4 and 5 and the expansion of that in Zone 6 appear to be contemporary, and the two settlement areas are also little more than 100m apart, the settlement in Zone 6 had a clearly defined southern boundary and the two settlements are separated by the shoulder of Ebbsfleet Hill. This suggests that the two settlements were discrete in their layout even if they may well have been related in other ways.

Zone 6

It is not certain that there was a continuous sequence of occupation from the Early to the Middle Iron Age. There was a reduction of activity in the north of the zone and although most Middle Iron Age features are in the centre or south of the zone in the area of the Early–Middle Iron Age occupation (Figs 3.30–2), Early–Middle Iron Age pottery types and Middle Iron Age ones did not occur in the same feature. However, pits containing only one or other type of pottery were found close to each other in the main clusters of pits, the new pits appearing to be less frequently dug than in the Early–Middle Iron Age. Furthermore, although no new trackways or droveways were built there is some evidence that the main north–south metalled trackway 170111 remained in use. This would suggest that if there was a hiatus in the occupation of the settlement it was relatively short.

Enclosure 190461 in the south of the zone continued in use but enclosure 170170 to the north-west apparently did not. There was an overlap between different building techniques for roundhouses in this phase but most were now defined by penannular gullies. Post-built roundhouses 145406 and 190476 had diameters of 13m and 15m respectively and although one or two of the buildings defined by gullies were of a broadly similar size (297089 had a diameter of 11m), most of them were somewhat smaller than the earlier buildings (170037, 190442, 190497– 8 and 190503). In one case, though, a post-built roundhouse 169003 with a diameter of 14m could be shown to have been superseded by an only slightly smaller penannular gully, 297089, which was 13m in diameter. One post-built structure was only 6.5m in diameter (190472), comparable in size to the one or two small Early–Middle Iron Age buildings. There was little evidence for the recutting of the penannular gullies. The adjacent gullies 190497–8 may represent the wall foundation and an associated eavesdrip rather than two phases of the same building. Overall, there was approximately the same number of larger circular structures in the Middle–Late Iron Age as in the Early–Middle Iron Age.

As well as these penannular gullies, post-built storage structures were erected (eg, four-post structure 170194). In some cases it is not clear whether successive groups of four- or six-post structures or larger rectangular buildings are represented (eg, structures 249121–2 and 249123 some 20 m to the south-east).

In the Late Iron Age phase a series of enclosures or compounds defined by rectilinear and curvilinear ditches were established (Fig 3.33). The northernmost compound, which is suggested to be formed by ditches 177039, 170090, and 262243, was cut by a large east-west ditch (170082) dated to the 1st century BC; this

provides a *terminus ante quem* for the establishment of the enclosure and perhaps the others whose alignments generally respect one another. There were droveways along the southern and eastern sides of this northernmost compound and as only a few pits were found within it, the compound may have been used as an animal pen.

Another compound lay to the south and this probably used the metalled trackway 170111 as its eastern boundary. Within the compound was a well-defined penannular gully, 169004, with a south-east-facing entrance. A second, larger, gully 170085 may be contemporary and represent an outer gully, perhaps an eaves drip. It is uncertain if a group of postholes 169005 represents a porch, an uncommon feature on buildings of this date, or formed a six-post structure which was presumably earlier in date.

To the south of this and in the centre of the settlement were three penannular gullies in a NW–SE row. The westernmost of these, 170127, was 13m in diameter and it encroached upon the route of the earlier metalled trackway 170111. Although truncated by later activity, short lengths of gullies aligned east-west and north-west suggest that these buildings had stood within individual compounds, but as it is probable that more than one phase of use is represented by these features it has not been possible to associate individual buildings and compounds with confidence. The two other penannular gullies in the NW–SE row, 170126 and 190505, were somewhat smaller than 170127, at 8m and 11m in diameter respectively, shallower and discontinuous (probably as a result of truncation). Another penannular gully, 123297, lay further to the south-east on the edge of but within a droveway, though this example was significantly smaller, having a diameter of only 6m.

To the south of this row of buildings, penannular gully 190496 was 11m in diameter. Unusually, this gully appeared to be possibly segmented, though it had clearly suffered some truncation, and there were apparently contemporary postholes between its individual lengths. To the east of this building were two north-south aligned ditches (170137 and 170144) that appeared to form a wide droveway.

South of the semi-circular compound were rectangular compounds represented by ditches 190455, 190453, 190465, 190456 and 190445 (Fig 3.32). There were only a few pits in the interior of the enclosures. To the east of them were two concentric penannular gullies 170030/1 which are likely to be contemporary.

It seems likely that the settlement in Zone 6 originated in the 6th–4th centuries and that it was occupied, perhaps with a hiatus around the 4th century BC, until the 1st century BC, the chronology of the later part of the sequence being indicated by the extensive coin assemblage. The earliest material is pottery of Early–Middle Iron Age date. There is also a bronze swan's neck pin and one, perhaps two, possible ring-headed pins made of bronze.

The settlement was unenclosed throughout its occupation. Its southern and northern limits were defined in Zone 6 but how far it extended to the west is not known. The eastern extent was demonstrated by the 2005 pipeline excavations, suggesting that the settlement probably stood close to the contemporary coastline. Most of the features found in those excavations were Middle Iron Age in date (Egging Dinwiddy and Schuster 2009).

The settlement seems to have developed alongside a well-established north-south trackway whose surface was metalled from the outset (170111). The earliest circular buildings were post-built and these were accompanied by smaller circular buildings, occasional four-post structures, and groups of relatively small circular pits with flat bases. It is possible that these buildings were set in small compounds that faced the metalled trackway and ditched droveways. The nearby settlement in Zones 4 and 5 appears to have been founded in the Middle Iron Age. Though the evidence is fragmentary, owing to the disturbance caused by extensive later occupation, it is clear that in Zone 6 ditched compounds became more common in the Late Iron Age and the sites of the contemporary buildings are defined by penannular gullies. As very few postholes could be associated with the penannular gullies but earlier post-built buildings could be identified, it seems likely that the gullies were foundation trenches rather than eaves drip gullies to channel away the run off the from the roofs.

The majority of buildings have a single gully but in two cases there are two concentric gullies. These could represent successive buildings or, as is considered more likely, they could be contemporary with the outer gully being an eaves drip. Unusually, building 190496 appears to use individual lengths of gully with postholes in between them. It is uncertain if this indicates a coincidental juxtaposition of features of different dates or a distinct style of building for which no parallel is known. Most of the buildings represented by the penannular gullies were 10m in diameter, but there are also some smaller examples which may have been ancillary buildings. Later activity means that the gullies, particularly the earlier ones, are often incomplete, but in one case, 170086, there was a south-east facing entrance, although it is uncertain if a group of postholes outside it represents a porch or an earlier structure. Gully 170127 may also have had a south-east facing entrance. At least one key that is likely to be of Iron Age date was found (ON 3960, see Vol 2, Scott, Chap 3, Fig 3.4, 124) and it could have been used to lock the door to one of these buildings.

In the Late Iron Age, most of the larger buildings, which may have been houses, were located in the centre or south of the settlement. Although at least three were found in an east-west row it is uncertain if they were contemporary rather than successive. In the north and south of the settlement there are comparably sized buildings that stand on their own, but there is little evidence for settlement in the adjacent ditched compounds other than scattered pits. It is possible that a semi-circular area defined by curving ditches towards the south of the settlement may represent a compound or

open space for animals that was used in association with the rectilinear enclosures. Along with the long lasting importance of trackway 170111 which ran through the settlement, this might suggest that animals were penned on the outskirts of the settlement. Cattle were the dominant species represented in the animal bone assemblage and a concentration of bone by an isolated area of metalled surface, 170113, could indicate the presence of a butchery area in the vicinity. The presence in pit 173275 of mineral-preserved seeds, including henbane which favours nitrogen-rich environments, twigs, rhizomes and what may be dung all suggests the presence of at least one midden or byre. Fish bones were also found in this pit.

A field system that may have been associated with the settlement was identified to the north in Zone 7, but in Zone 6 relatively few four- or six-post structures, which are commonly interpreted as raised granaries, can be identified, neither were there were any large grain storage pits. Accordingly it seems likely that stock keeping was an important part of the agricultural basis of this low-lying coastal settlement. However, the crops found are all typical of the crops grown in the region in the Iron Age – spelt, emmer and barley and also peas and beans, and they may well have all been grown locally. Seeds of leaved pepperwort might have been seeds of cultivation but it is possible that they were collected for their oil. Agricultural tools include a ploughshare of Iron Age type (ON 305), reaping hooks, a rare example of a scythe (ON 3940, see Vol 2, Fig 3.2, 26), and a fragment from a pair of shears (ON 3941). The cereals were ground using querns of Greensand quite possibly produced by the industry working the exposures in the Folkestone Beds in the cliffs at Folkestone itself. Both saddle and rotary querns were present, with both types being found with Early–Middle Iron Age pottery. Burnt flint may indicate that it had been heated for use in cooking.

Other activities were textile working, as represented by two weaving combs (ON 4199 and 3906, see Nelson Vol 2, Chap 7, Fig 7.3,6) and a clay spindle whorl (ON 2771 from Zone 7, see Poole, Vol 2, Chap 12), and metalworking. A small amount of iron smithing slag was found and a hooked billet or ingot which is probably of Iron Age in date (Cat. No. 51, see Vol 2, Fig 3.3, 51), as is a possible metalworking poker (ON 3209; Vol 2, Fig 3.3, 46). A woodworking saw (ON 2995) was recovered, one having been found previously in the nearby 2005 excavations (Dinwiddy and Schuster 2009, 110, fig 2.23, 025, 117). Fired clay from salt working was found across the site but mainly in small quantities. Fragments of a hearth and an unusual clay disc came from the metalled surface of a trackway (126275) and two pits (256029, 277042) contained triangular perforated bricks. Only one pit (244292) contained a range of materials including oven/hearth structure and floor, wattle supported panels and briquetage. The small quantities of material are consistent with domestic rather than industrial salt production (see Vol 2, Poole, Chap 12). The presence of a lump of unworked shale and three fragments of unfinished shale bracelets suggests that shale working was also undertaken, perhaps in the central part of the area. However, as with the limited evidence for other craft activities, it is impossible to define the location of this more precisely. A single possible slingshot was found in a pit 291130 but no weaponry can certainly be attributed to the use of the settlement.

Three formal burials were contemporary with the occupation of the settlement. The burials of an adult male (grave 292075), a juvenile (297080) and a neonate (176140) were found, but although some small pieces of disarticulated human bone were also found, there were no formal burials in pits as seen in Zones 13 and 19. A horse's head from pit 279145 might be a special deposit, as might be the dog penis bone found in pit 302077.

Zone 7

Although not well dated, some features found immediately to the north in Zone 7 are certain to have been associated with the settlement in Zone 6 (Fig 3.34). Ditches 201083 and 201085 appear to have been related to the trackways and enclosures in Zone 6, while a metalled surface 262210 almost certainly represents a continuation of the trackways in Zone 6. Apart from the eastwards continuation of the major ditch 170082 found in Zone 6, no other Iron Age features were found in the south of Zone 7.

Almost 150m to the north of ditches 201083 and 201085, two parallel ditches 201099 and 201100 lay on the same alignment as them, which might suggest that they were part of a system of fields and droveways associated with the settlement in Zone 6. Ninety-five metres further to the north a SW–NE oriented enclosure was defined by pairs of parallel ditches (201147 and 201149 on the southern side and 165067 and 165068 on the northern side), with a possible third ditch on the southern side (Fig 3.35). Inside this enclosure was a right-angled ditch 201160 which may have served as an internal boundary, with SW–NE aligned ditch 165056 being a subdivision. Within the area defined by ditch 201160 were a number of four or six-post structures (201171–5) and also a few pits suggesting that the compound, or at least the area of it that was exposed, was used primarily for storage rather than residence (Fig 3.35). A curvilinear ditch immediately to the north of this, 201161, may represent another internal subdivision of the enclosure. The small area that was available for excavation contained three pits (246102, 298049 and 301035) hinting that it may have had a different function. The large later Iron Age enclosure defined by ditch 201143 may represent a slight shift of the settlement to the south-west.

Zones 10–11

A related series of rectilinear enclosures was found in Zone 10 (Fig 3.37). One group of almost right angled ditches (249191–3) may have been the corner of a settlement enclosure as the earliest ditch in the sequence was 1.8m deep and might have held a palisade. The ditch is undated but as Early–Middle Iron Age pottery was found in the later ditches it is possible that the

earliest ditch was dug towards the beginning of the currency of this style of pottery. To the north of the ditches three pits (242133, 247305 and 249228) that can only be dated to the Middle–Late Iron Age contained domestic debris. They may be associated with the group of three four-post structures immediately to the north (247321, 249180 and 249182), though these have been attributed to the Late Iron Age rather than associated with the ditched enclosure.

Elements of a field system were found across much of Zone 10, the north-south elements being represented by ditches 178360, 249184, 249229, 249251, 194084 and 194080. Ditch 194084 continued beyond the northern edge of the field system. More ditches were found further to the north in Zone 10. These were aligned east-west and may have defined a droveway. Within the field systems a four-post structure 248247 stood near the junction of ditches 249238–9; if these two ditches were contemporary the building would have been in the corner of the field. Part of the curvilinear gully of a roundhouse (196112) was found in the east of Zone 10 and it may also have stood within the field system. Although only part of the gully lay within the excavated area, enough of it was visible to be confident that it represents a roundhouse, albeit only 5m in diameter. An adjacent short length of curving gully (196111) may also indicate the site of a roundhouse. Roundhouse gully 196112 was cut by an Iron Age ditch.

In the northern part of Zone 10, curvilinear ditch 194110 was the earliest of a sequence of relatively large ditches defining an enclosure, most of which lay to the west beyond the excavated area (Fig 3.39). This ditch was repeatedly recut into the Roman period, hinting that it may have been a settlement boundary. The end of a possible droveway lay 40m to the north-east of the ditch. A north-south aligned trackway was also located, the western ditch being 159319. A series of field boundaries including some double ditched features that may be further trackways were also found in Zone 11 and it seems likely that these all belonged to the same system (Figs 3.40–1). Only one element in Zone 11 is dated, ditch 190414, but it is respected by trackway 190405 and 194015, which suggests that the trackway is also Iron Age in date. The other undated boundaries and double ditched trackways (eg, 190401–2) in the vicinity have been tentatively dated to the Iron Age on the basis of the pottery from 190414. Similar trackways were seen towards the northern end of Zone 11 and further east in Zone 12, while further up the slope a field system in Zone 17 is again tentatively dated to the Iron Age.

There were two possible four-post structures in Zone 11 (Fig 3.40). One (169007) was undated but the other (169008), which was more irregular in shape, contained small quantities of cremated human bone dated to the Middle–Late Iron Age. It is not clear if both of the buildings had a funerary purpose or whether they represent isolated buildings of the sort that were found in Zone 10.

Zone 12

Zone 12 contained a complex series of enclosures and trackways (Fig 3.41–5). Some of these date to the Late Iron Age and were built either side of a broad north-south aligned hollow-way (190163) which had its origins in the Middle Iron Age if not earlier (Fig 3.42). The best dating evidence for this comes from the Middle Iron Age inhumation burial cemetery. Ten of the 13 or more graves were in a north-south row between the hollow-way and its western ditch. This suggests that the hollow-way was in existence by the 4th–2nd centuries BC.

The lengthy stratigraphic sequence of the associated enclosures indicates that they were in use for some time and it seems likely that the majority of them originated in the Middle Iron Age. It also seems likely that the main purpose of the enclosures, several of which are sub-divided by ditches, was as compounds for livestock. There are entrances in the north-west corners of the earliest of the sequence of enclosures to the west of the hollow-way (designated phase I) and these lead to what may be smaller compounds within the enclosure. In phase III a droveway, whose eastern side was formed by ditch 190192, appears to lead to the entrance of the enclosure. To the east of the hollow-way, trackways or droveways 2 and 1 flank enclosures 2 and 4. Enclosure 2 was sub-divided by a corridor that leads from the trackway and which has entrances to compounds E2a and E2b. A long boundary that runs east from enclosure 2 defines the north-eastern extent of the compounds. Represented by ditches 190092 and 190096, the boundary had two gaps in it which presumably were for entrances for animals.

There was little evidence for domestic activity in these enclosures. In general there was only a low level of finds that might indicate occupation and there were few buildings. An undated four-post structure and some other postholes were found to the west of the hollow-way and an undated group of postholes (193023) was found in enclosure 4a to the east of it. Some postholes to the west of this group were Late Iron Age in date, hinting that group 193023 may also be of this date.

Zones 13, 14 and 26

To the east in Zones 14 and 26 some of the double-ditched droveways can be shown to have originated in the Early–Middle Iron Age and it is possible that at least some elements of the enclosures and trackways in Zone 12 are contemporary. The enclosures and droveways in Zones 12, 14 and 26 were situated either side of and to the south of the large trapezoidal enclosure in Zone 13 (134099, discussed further below), and even though the dating evidence suggests that they are of different dates their alignments make it likely that they were all broadly contemporary.

In Zone 26 a trackway is represented by east–west ditches 201056–7 (see Fig 4.46); small quantities of Early Iron Age pottery came from the ditches. It is possible that various other ditches in Zone 26, some of them defining trackways, also originated in the Early–Middle Iron Age, but the generally sparse pottery

offers no convincing evidence for this and a later, Late Iron Age/early Roman date is considered more likely (see Chap 4). An isolated pit (240011) in the north of Zone 26 contained Early–Middle Iron Age pottery and is contemporary with the nearby enclosure 134099.

Zone 15
A single isolated length of gully (125057), containing a few sherds of Early–Middle Iron Age pottery, may hint at the presence of settlement in the vicinity.

Zone 19
The inhumation burial in pit 205106 indicates that this settlement continued in use into the Middle Iron Age (Fig 3.59; Pl 3.31) but it is not possible to associate any of the other settlement features with it.

Zone 22
A small ditched enclosure and trackways may have had their origins in the Middle Iron Age as they contained pottery of Middle–Late Iron Age date (Fig 3.60). The horseshoe-shaped enclosure 290420 stood to the east of a large north–south aligned ditch (290571). Approximately 100m east of the enclosure was a short length of double ditches (290575 and 290576) aligned broadly east–west. These were cut through by a long east–west trackway or droveway (290573–4) that cut into the latest fills of enclosure 290420. There were no features inside the enclosure, which suggests that it was used for animals. A small fragment of fired clay, possibly from a salt-making hearth, was found in Zone 22 and it is just possible that this indicates that salt was being brought to animals.

Zones 23 and 24
Two pots were placed in or near to the three Early Bronze Age ring-ditches in Zone 23 in the Iron Age, whilst other Iron Age material came from the upper fills of the ring-ditches. An Early–Middle Iron Age vessel (ON 910) appeared to have been placed in the outer ditch of ring-ditch 195005, and a small pit (290001) close to ring-ditch 193123 contained a truncated but almost complete Late Iron Age vessel. These finds and some clusters of undated postholes, including a six-post structure (195121), in Zone 24 (Fig 3.62) are likely to be related to the Tothill Street settlement excavated immediately to the south-west in 2005 (Gollop and Mason 2006).

The Iron Age settlements
It was noted above that the division and use of the landscape became more intense in the Iron Age. Settlements were more permanent than in the Bronze Age and the Iron Age settlements in Zones 4, 6, 7, 10, 12, 13 and 19 all had more than one phase of activity with that in Zone 6 being occupied for several centuries, if not necessarily intensively or continuously.

Until very recently Iron Age settlements were strikingly rare in Kent as a whole and on Thanet as well (Champion 2007a, 300; 2007b, 106). While parts of individual sites had long been recognised, for example at Dumpton Gap (Hurd 1909), it is only in recent years that extensive open-area excavations have revealed large parts of Iron Age settlements such as the Early Iron Age settlements at Thanet Earth (Rady 2010) or further to the west at White Horse Stone (Champion 2011, 211–12, fig 4.24). Partly as a result of this history of research, the chronology of Iron Age pottery in Kent is not well established. The radiocarbon dated material from Cliffs End Farm, which is close to Zone 26, suggests that the Earliest Iron Age material there can be dated to the 8th or more likely 7th century BC (McKinley *et al* forthcoming), and there is a large and important assemblage from Monkton Court Farm on Thanet (Perkins *et al* 1995). Although not found in large quantities in the current project the identification of small groups of this pottery in Zones 4, 7, 13 and 16 implies that its use was widespread. This might suggest that the general rarity of this material in Kent (eg, Champion 2011, 162–4, 211) may be due simply to its relatively short currency.

The palisade in Zone 13 was probably not an isolated feature, and may have formed a western boundary to the Late Bronze Age droveways and enclosures in Zone 14, whose use probably extended into the Early Iron Age. Apart from Zone 10, Iron Age palisade trenches have been reported at South Dumpton Down, where they were described as 'Early Iron Age' (Perkins 1995, 469), and also at Hartsdown Community Woodland Scheme (Perkins 1996, 273), though it is not clear whether either of these had evidence for timbers. A palisade comprising single posts is also known at North Foreland where it was associated with a settlement of 5th–4th century BC date (Moody 2008, 123, fig 70).

No clearly defined Early Iron Age groups were identified but important groups of material dated to the 5th–4th centuries and described as Early–Middle Iron Age were present in Zones 6, 13 and 19. Although not directly associated, the presence of definite or probable swan- and ring-headed pins in Zones 6 and 13 provides important independent dating evidence.

The settlement in Zone 6 represents an important addition to the settlement record for Iron Age Kent. Although the complete plan of it was not exposed, its limits were established on three sides and it provides clear evidence for the change from post-built houses without eaves drip gullies to the use of gullies in the Middle Iron Age. It remains uncertain, however, if the gullies represent foundation trenches or eaves drip gullies and, perhaps surprisingly, no circular buildings of Iron Age date had been recorded from Thanet previously (Moody 2008, 129). In the Early–Middle Iron Age several large circular buildings and some smaller ancillary ones accompanied by four-post structures stood at any time. The focus of the settlement in Zone 19 lay outside the excavated area though an important and well stratified group of Early–Middle Iron Age pottery was found in one of the pits.

It would appear that there was an increase in settlement at this time on Thanet, or at least in its archaeological visibility. As well the sites in Zones 6 and 13, settlements of similar date are known from South Dumpton

Down (Perkins 1995b, 469), Hartsdown Community Woodland Scheme, Margate (Perkins 1995a, 469; 1996, 273), North Foreland (Moody 2008, 123, fig 70) and Thanet Earth at Monkton (Rady 2010, 7–8; Weekes 2010, 358).

In the Middle Iron Age the size of the settlement in Zone 6 expanded and the number of buildings increased. Although physically discrete, a settlement in Zones 4 and 5 was established and it may have been related to the larger settlement in Zone 6. A field system may also have been created to the north of the settlement at this time. Other field systems or droveways were found in Zones 10, 12, 14 and 26, 17 and 22. In Zones 10 and 12 these were associated with settlements. In Zone 7 an enclosure contained a number of four-post structures and a few pits, but no circular buildings. In Zone 10 there were isolated circular buildings, a four-post structure and buildings associated with enclosures and trackways, and there was similar evidence from Zone 12. While it is possible that the focus of these settlements lay beyond the road corridor (more than 150 probable Iron Age features, mainly postholes, were found approximately 100m to the north of Zone 12 (Trust for Thanet Archaeology 2002)), it is also possible that these buildings and pits are typical of smaller settlements where occupation was either short lived or at a low level, with the intensely occupied settlement in Zone 6 being atypical. There was no evidence for occupation in the small enclosure in Zone 22 which probably originated in the Middle Iron Age, and which was associated with droveways. There is evidence, however, for Middle–Late Iron Age settlement adjacent to Zones 4 and 5.

Late Iron Age settlement was also found in Zones 6 and 7, 12 and 13, which is interesting as many of the Late Iron Age sites found elsewhere in Kent so far appear to have been new foundations. It is uncertain if the Iron Age occupation of Zone 6 was continuous. Only a single feature, pit 168115 in Zone 13, demonstrated a stratigraphic sequence from Early–Middle Iron Age pottery types to Middle Iron Age ones. In Zone 6 the Middle Iron Age pottery, which is considered in detail below (see Vol 2, Leivers, Chap 8), shows a clear typological progression to, firstly, Middle–Late and secondly Late Iron Age types. Unfortunately despite, or perhaps because of, the long sequence of occupation there were few large well stratified groups that demonstrate this progression. The relatively few large Middle Iron Age features such as pits often contained redeposited Early–Middle Iron Age pottery while much of Middle–Late Iron Age pottery was itself also redeposited as a result of the later Roman occupation. There are only two relatively large mid–Late Iron Age groups, from ditch 190272 in Zone 4 and pit 292075 in Zone 6.

Although a large number of features in Zone 6 contained sherds attributed to the Late Iron Age most were in very small groups, none of which contained more than 50 sherds. Instead, most of the large groups of this date come from Zone 13. Interestingly, there are a large number of coins from Zone 6 that date to the later 2nd and the first half of the 1st century BC, but almost none dating to the second half of the 1st century (see Vol 2, Cooke and Holman, Chap 1, Fig 1.1). The relationship between these two observations is not yet clear but it is possible that for a time the Iron Age settlement in Zone 6 was abandoned (see below).

It seems unlikely that all the Middle Iron Age buildings on Zone 6 were contemporary and only a few buildings may have stood at any one time. Even so this represents a distinct increase in both the visibility of prehistoric settlements and their longevity on Thanet. An increase in the number of buildings at this time is also seen not far to the west of Thanet at Highstead (Bennett *et al* 2007) and Eddington (Jarman 2005). This increased archaeological visibility may be compared with that of sites in the Upper Thames Valley. The Iron Age of that region is one of the most intensively studied areas in England and this work has shown that what initially appears to be the remains of intensive settlement can often represent activities that are spread over several centuries (Lambrick and Robinson 2009). The agricultural basis and the range of domestic activities undertaken in the Thames Valley may also be compared with that of the low-lying sites in Thanet.

The trapezoidal enclosure in Zone 13

The enclosure in Zone 13 (Fig 3.47) appears to fit easily into this well-known pattern of settlement. The trapezoidal form resembles that of a typical rectilinear settlement of Iron Age date, for example that at Farningham Hill in the Darent Valley in west Kent (Philp 1984). Like many other Iron Age enclosures the single entrance, which is in the shortest, eastern, side of the enclosure, faces south-east. The presence of large areas of pits and quarries outside Iron Age enclosed settlements (Fig 3.49) is well known, to give just one example, at Winnall Down, Hampshire (Fasham 1985, 17, fig 9). Another, local, example is at North Foreland but here the enclosure appears to have contained only four-post structures (Moody 2008, 123, fig 70). However, in Zone 13 there appears to have been more activity outside the enclosure than inside it.

In this regard and others there are also some important differences between the enclosure in Zone 13 and typical Iron Age settlements. There is only one surviving building (174060) within the enclosure and unlike the vast majority of Iron Age buildings which were circular, it is both square and sunken, 6.5m square and 0.8m deep (Fig 3.48; Pl 3.27). It is also uncertain if a bank flanked the inside of the enclosure ditch, which is normally the case in an Iron Age settlement. The pits in the south-west corner which are thought to be contemporary with the enclosure would have been covered by an internal bank unless there was a wide berm or the bank was discontinuous. Although apparently almost completely infilled, the Early Bronze Age ring-ditch (Barrow 2) may still have been visible and if so it could have formed a division within the enclosure. The sunken-featured building 174060 lay within this area, towards the north-east corner of the trapezoidal enclosure and in the highest part of the site (Fig 3.47).

Building 174060

Although a few sunken-featured buildings have been recognised on Thanet, these are typically rectangular or sub-rectangular and most examples of prehistoric date are Late Iron Age (see Chap 4). However, one example of a sunken-featured building that is contemporary with or perhaps slightly earlier than building 174060 is known adjacent to Zones 23–24. Excavations at Tothill Street in 2005 revealed an enclosed Iron Age settlement that included two rectangular buildings. One was 13m by 7.5m and post-built, the other was sub-rectangular or oval, 8m x 5m in size and sunken-floored. There were large posts at both ends as well as a number of postholes and two pits in the uneven base of the structure (Gollop and Mason 2006, 25–6).

Square and sunken buildings

Elsewhere in Britain sunken structures occur regularly in certain areas, for example fogous in Cornwall or souterrains in Scotland, but they are special purpose buildings, perhaps for storage or refuge, that formed one element of settlements. No precise parallels for subterranean building 174060 are known from Iron Age Britain. Its difference from typical domestic buildings in both Britain and also the near Continent suggests that building 174060 had a special function. No artefacts were associated with its use; the finds from it relate to the later infilling of the building with dumped material. Although the building is subterranean, there is no evidence that it was originally a grave or associated with mortuary rituals.

Square and rectangular buildings of Iron Age date in Britain (apart from simple four-post and six-post structures) comprise a small, heterogeneous, and much debated, group (Rodwell 1978; Downes 1997; Smith 2001; Moore 2003; Hamilton 2003). The evidence is often ambiguous but it seems clear that rectangular buildings have been found, although infrequently, and date throughout much of the Iron Age. Even so, the two buildings at Tothill Street are unusual finds and the post-built example has closer parallels with continental Europe than Britain. In contrast, square buildings are much less common in Britain, though it is possible that some examples have been misinterpreted simply as pits in the past.

Only occasional examples of square buildings are known from settlements. At All Cannings Cross, Wiltshire, which is slightly earlier than the Zone 13 structure, two successive square-shaped layers of stones covered approximately the same area as structure 174060. These layers were interpreted as flooring by Cunnington though she viewed them, and other layers of stones on the site, as hard standings in front of buildings rather than as dwellings (Cunnington 1923, 58, 68, pl 4, fig 3).

Square buildings have been interpreted more frequently as temples or shrines. While in some cases the theoretical basis of this interpretation can be criticised (eg, Downes 1997; Smith 2003), it is probable that some square buildings were indeed temples. The clearest examples of such temples include the 'Heathrow temple', Middlesex, (Grimes and Close Brooks 1993) and the buildings at Danebury, Hampshire and Stansted-Airport Catering Site, Essex (Cunliffe 1984, 81–7, 187, fig 4.31–5; Havis and Brooks 2004, 104–8, 533, fig 74–5, 346, pl vi). At the last two sites the square buildings were located in the centre of settlements in which, with the exception of four-post structures that are presumably granaries, the other buildings are circular houses. These square buildings have continuous bedding trenches that suggest that they were built in a different way from roundhouses which are typically post-built (Fitzpatrick 1997, 229–31).

Most square temples date to late in the British Iron Age. Only the four Danebury structures date to the Middle Iron Age and are broadly contemporary with the Zone 13 building. The largest of them, known as RS1, was 9m x 8m, with traces of an internal partition; the other three are much smaller. The entrances of all four Danebury buildings are to the south. No obviously votive offerings were found at any of the buildings. However, none of the British Iron Age square shrines, certain or probable, is subterranean. There is, though, another subterranean find not far away, at Mill Hill, Deal where a 2.5m deep shaft that gave access to a small chamber has been interpreted as a subterranean shrine. The shaft lies approximately halfway between two of the groups of burials at the site. Although it was filled in during the 2nd century AD it has been argued that its construction was contemporary with the use of the cemetery, which was mainly in the 3rd–1st centuries BC. Amongst the finds was a small chalk figurine that has stylistic parallels in both the Iron Age and Roman periods that may well have stood in a niche in the chamber (Parfitt 1986; 1995, 156, fig 1; Parfitt and Green 1987). A very similar cave site was found nearby at Spratling Court Farm, Manston and while the infilling was dated to the Roman period, when it was excavated is uncertain. Intriguingly the cave was next to a very large pit that has only been recorded in section. The pit is 15m across and up to 2m deep and its infill is dated to the Late Iron Age. The pit is interpreted as a chalk quarry on the basis of nearby pits of similar shape and of Roman date (Baker 2011). It is not known if there is any relationship between the uses of these caves and subterranean building 174060 in Zone 13.

Despite the isotope analyses that indicate that some of the people buried in the Middle Iron Age cemetery in adjacent Zone 12 were incomers, building 174060 does not find ready parallels in the near Continent either. While rectangular houses are the norm in northern France and Belgium, subterranean buildings are rare with only very occasional rectangular examples known, such as those at Pont-Remy, Picardy, which are thought to have been workshops at a specialist salt producing site (G Prilaux pers. comm.), but perhaps tellingly, examples are known from what is argued to be, at least in part, a religious site at Montmartin, Oise in north-east France. Three buildings at this site were subterranean (structures 50, 105, and 106) (Brunaux and Méniel 1987, 50–67).

As in England, square buildings are best known as temples and most of these also date to late in the Iron Age

(Arcelin and Brunaux 2003). In some cases, however, the earliest structures at the sanctuaries were settings of pits. For example, at both Gournay-sur-Aronde and Vendeuil-Caply, both in Oise, U-shaped or square arrangements of pits with a larger central pit preceded the building of square temples. The pits and temples were both sited centrally within a square enclosure as was typically the case for temples in France. The pit structure at Gournay dates to the early 3rd century BC and was placed within an enclosure dated to the 4th century. The excavators regard the pit as having been used in rituals associated with chthonic (of the underworld) deities, particularly with the sacrifice of cattle. They note that in contrast to the remains from settlements, male animals dominated, and bulls were more frequent than oxen. Both had worked as beasts of burden but their age, around 10 years, was much older than the remains typically found on settlements, suggesting that the animals had been kept beyond a typical working life. There were also a relatively high number of older animals amongst the cattle found in Zone 13.

The making of votive offerings was not practised at all Iron Age sanctuaries and where it was, it is a practice that often dates to late in the Iron Age. Even at sites where offerings became abundant, such as Gournay-sur-Aronde, they do not appear to have been made in the earliest phases. The absence of offerings can also make the identification temples in central European *Viereckschanze* difficult. The siting of a building in the corner of a rectangular enclosure occurs regularly in the *Viereckschanze*, though it is now clear that not all such rectangular Iron Age enclosures were sanctuaries. However, where an enclosure contains only one or two square or rectangular post-built buildings and they are sited in a corner of the enclosure it seems likely that these buildings were temples (Venclova 1993; Wieland 1999). A distinctive building technique found in some of the square temples is the use of foundation trenches of the sort hinted at in building 174060 in Zone 13. Unlike building 174060, however, these wall trench buildings, which are typically 8m square, have a square arrangement of four large postholes in the interior that supported either a pitched roof or a central tower. These buildings are found not only in *Viereckschanze* but also in *oppida* (at Manching, Bavaria) and in open settlements within which they often occupy prominent positions. They have been found in eastern France, Germany, the Czech Republic and Austria (eg, Trebsche 2010). Lastly, a very few subterranean rectangular buildings have been found in *Viereckschanze* in Bohemia known, for example, at Markvartice 1 in Bohemia, Czech Republic, and they have also been tentatively interpreted as shrines (Waldhauser 1989, 49, fig 9–10). However, almost all of these temples are later than building 174060. The square wall trench buildings and *Viereckschanze* typically date to the 2nd and 1st centuries BC, which is at least a century later than the building and enclosure in Zone 13.

No exact parallels for building 174060 have been found (Fig 3.48). Its shape is doubly distinctive in a British Iron Age context, being both square and subterranean. Nor is it certain that the enclosure within which it was situated had an internal bank as might be expected. However, as Bradley (2003) has discussed, it is important not to expect that every aspect of sanctuaries and temples should appear markedly different from the domestic. It is an important point as parallels for individual aspects of the enclosure and the building in Zone 13 can be found amongst a range of later Iron Age sanctuaries; the enclosure (or temenos) that defined but did not defend the sacred space, and a distinctive type of building (a temple or house of the gods) that was often square and situated either eccentrically in one corner of the enclosure or in its centre. Building 174060 was sited at the highest point of the promontory in Zone 13, with extensive views across Pegwell Bay to the French coast, and on the site of the earlier barrow, which would still have been extant when the trapezoidal enclosure was laid out, with the ring-ditch perhaps remaining visible even after levelling and infilling. It may be noted that Iron Age pots were placed in or near the ditches of barrows in Zone 23 (see Chap 2), suggesting at least some use of earlier monuments (*cf* Hingley 1996). The fragment of human skull dated to the Early Bronze Age found in the sunken-featured building in Zone 13 presumably derives from a funerary context, although whether it was ascribed any special significance when it was discovered in the Iron Age or was accidentally incorporated into the material used to deliberately infill the building is not known. What is clear is that the skull cannot be shown to have been associated with the use of the square building.

It is also important that many Iron Age temples were differentiated from contemporary buildings either by being a different shape (in Britain this was often by being square as opposed to round) or by using a different building technique such as wall trenches instead of individual posts; this feature is found both in Britain and continental Europe. The continental wall trench buildings may have had central towers. A few possible shrines were subterranean and the arrangements of pits in the earliest stages of some sanctuaries in northern France may be chthonic. It is not certain that building 174060 had a wall trench all round its edge (Fig 3.48) but it was clearly distinguished from roundhouses by being square and subterranean.

While the architecture of enclosure 134099 and building 174060 is distinctive, the range of finds from them and from the contemporary activity to the north and west of the enclosure largely seems to be typical of a domestic context. With the possible exception of a crucible for working gold, discussed below, the finds from the enclosure and associated features appear typical of domestic assemblages, although in contrast to Zone 6, there are no metal tools. The chaff from the charred plant remains indicates that crops were processed at the site. Evidence for salt production was found in the form of a wattle supported oven structure for salt making and briquetage vessels from the enclosure ditch, a group of triangular perforated bricks in pit 130032, and several large groups of fired clay from pits and other features (125053, 134099 and 168135)

that included parts of ovens and other objects of fired clay. This material is suggested to represent salt making on a domestic scale. A small number of spindle whorls indicate that textile working was also undertaken, perhaps also on a small scale, and a similar interpretation seems likely for the few fragments of unfinished or broken shale bangles.

There are, though, some quite distinctive aspects of the animal and avian bone assemblage. These include the relatively high proportion of older cattle, the under-representation of sheep metacarpals (fore feet) in relation to metatarsals from Zone 13 as a whole, a number of domestic fowl, the presence of donkey which is never common in Iron Age Britain (see Vol 2, Strid, Chap 14), and the small assemblage of fish bones. A male horse was also buried in pit 177193 to the north of the enclosure and radiocarbon dated to 390–200 cal BC (2230±35 BP; SUERC-40738). (Pl 3.29) The burial of complete horses is very rare in Iron Age Britain, although parts of them occur relatively frequently in placed deposits. A complete burial, this time of a female buried on its left side and probably of 2nd or 1st century BC date, was found in grave 53 in the 'south-west cemetery' at Mill Hill, Deal (Parfitt 1995, 26–7, 146–7, 156, 165, fig 6) and another burial also thought to be Late Iron Age is recorded from Cressing Temple, Essex (Kemble 2003, 15).

Fish bones are so rare from Iron Age sites in Britain that it has been suggested that they were avoided (Dobney and Ervynck 2007), so the presence of fish bones including a few vertebrae from eel, herring, and probably whiting, in Early–Middle Iron Age pit 173188 in Zone 13 is notable (see Vol 2, Nicholson, Chap 15). However, these remains need to be seen in the context of the fish bones from a broadly contemporary pit in Zone 6 and from an Iron Age pit in Zone 14 (unless this example is intrusive from the Anglo-Saxon activity in Zone 14). This suggests that in this part of Kent at least, some fish were eaten in the Iron Age.

Bones of domestic fowl were found in pit 156135 to the north-west of the enclosure and in building 174060. Three bones were radiocarbon dated and all returned determinations that were certainly or probably in the Middle Iron Age representing early examples in Britain: 370–100 cal BC (2165±35 BP, SUERC-40732), 380–170 cal BC (2190±35 BP, SUERC-40733) and 200 cal BC–cal AD 10 (2075±35 BP, SUERC-40734). The spur on the leg of one cockerel had been removed, possibly for cock fighting, but it is also possible that the birds were still an exotic foodstuff.

The over-representation of older cattle at the sanctuary of Gournay-sur-Aronde has already been noted above, but these aspects of the animal and avian bone assemblage from Zone 13 do not necessarily indicate a ritual purpose for enclosure 134099 – for example the burial of part of raven in the lower fills of enclosure ditch 134099 is a type of deposit found on other settlements even if the bird did have a religious significance (Vol 2, Strid, Chap 14; Serjeantson and Morris 2011, 87–94, tab 1), but they do help further distinguish it from a typical settlement.

All of this may suggest that if the enclosure was a settlement it incorporated elements that at a later date became characteristic of sanctuaries and temples. But in the 5th–3rd centuries BC while distinctions between the sacred and profane may have been made increasingly clearly, the differences had yet to develop to a point where people had specialised religious authority and there were temples. Instead authority may have had elements of both the sacred and the profane (*cf* Fitzpatrick 2007).

In this more fluid view, the enclosure in Zone 13 could be seen as part of a high status settlement marked by distinctive architecture and a strict control of space. Most domestic activities took place outside the enclosure. A few of the finds hint at this. Perhaps the most important of these is the presence of a small, lipped crucible that may, despite the absence of metallurgical traces in XRF analysis, have been for precious metals which at this date would almost certainly have been gold. The crucible is from pit 186033 which lies to the north-west of the enclosure. The adjacent pit 211067 contained parts of a polychrome decorated vessel. Such a combination of a high status settlement with religious elements is argued for at the broadly contemporary settlement of Montmartin, where there is a spatial separation between what are interpreted as settlement and sanctuary in different areas of a promontory (Brunaux and Méniel 1987).

The agricultural basis

Whatever the precise nature of the enclosure in Zone 13, the material from the pits outside it appeared to contain domestic debris which included good evidence for the farming regimes practised (Hunter and Strid below). Amongst the charred plant remains of Early/Middle Iron Age date from Zone 13, and also Zone 6, spelt was the type of wheat identified most commonly, though some emmer is also present. Although hulled barley is present in the Late Bronze Age, all the Iron Age barley is of the hulled variety. Spelt is the dominant wheat in all the Iron Age contexts and this suggests that it began to be favoured above emmer early in the 1st millennium BC. Emmer continued to be grown as it was elsewhere in Kent; this is a distinctive regional feature as its cultivation all but stopped in some other regions of southern England.

As in the Bronze Age, pea and broad bean are present and flax occurs occasionally, as it does from the Neolithic onwards. Flax may have been grown for oil from the seeds and textiles can be made from the fibres in its stem once they have been released by soaking (or retting). A deposit of what may be narrow leaved pepperwort found in pit 173275 in Zone 6 could be weeds of cultivation but it is also possible that they were collected for their oil. This deposit also contained twigs, straw, rhizomes and what may be dung (see Vol 2, Hunter, Chap 17). This combination of materials could represent burnt byre or stable waste, with the leaf and twigs having been used as animal fodder. Some of the material from this pit was mineralised indicating that it may have been in cess, though the relatively restricted range of species present

suggests that the material may have been thrown into the pit rather than the pit being a cess pit. Henbane, a plant that favours nitrogen-rich environments such as middens, was also present in the sample. The wood species in the same sample were dominated by hazel with some hawthorn-type and blackthorn-type charcoal, suggesting the presence of either open scrub-like areas or hedgerows. A Middle Iron Age sample of charcoal from pit 211043 in Zone 13 was dominated by charcoal suggesting that it was used as fuel.

As noted above, the date at which the woodland clearance seen in a pollen diagram from the Wantsum Channel accelerated is not well established. While provisionally suggested to date to the later Iron Age and Roman periods (Hearne *et al* 1995, 312), at least in the vicinity of the Wantsum Channel, the clearance could have started earlier elsewhere and might be associated with the steady increase in the number of settlements found from the Late Bronze Age onwards.

Only a single sample of charred plant remains of Middle Iron Age date was suitable for analysis, from pit 182246 in Zone 4, but this was relatively well-preserved. The wheat chaff was dominated by spelt with some emmer and some possible rye, which might be intrusive. Hulled barley and broad bean and other legumes were also present. The weeds of cultivation suggest that light sandy soils were being exploited, possibly near to the shore of the peninsula. A similar range of crops is evident in the rather more common Middle–Late Iron Age samples. Most of these came from Zone 4 but there were others from Zones 5, 7, 10 and 12. Spelt is the dominant cereal but emmer is still present, as are six row hulled barley and oat. Peas and beans are also present in small quantities. The presence of scentless mayweed as a weed of cultivation indicate that light soils continued to be cultivated, though occasional seeds of other species suggest that some acidic soils and heavier soils were cultivated. A well-preserved group of remains, especially wheats and oats, but also including peas, was found in pit 280119 in Zone 4. As the grains were still partly encased in their spikelets it seems that the cereals were burnt either when they were being dried for storage or being parched before being pounded to release the grains. This evidence is consistent with the rather limited data for Iron Age farming available from elsewhere on Thanet (eg, Gardner and Gibson 2008; Moody 2008, 123).

The animal bones indicate that cattle continued to be the dominant species consumed but sheep/goat and pig became relatively more important. This composition is typical of Iron Age assemblages in southern England, as are the relative proportions of male and female animals and the ages at slaughter (Hambleton 1999). Most of the cattle were female, indicating an emphasis on dairying. Predictably, the best-preserved assemblage came from Zone 13 which is located on chalk.

The assemblage from Zone 6, where the settlement was occupied for a much longer period, was smaller, though it is interesting to note that there were two waterholes in this settlement whereas only a single possible Bronze Age well or waterhole was found across the whole scheme, in Zone 10. In Zone 6 cattle formed a slightly higher proportion of the small assemblage, possibly as fewer pig were kept in relation to the Zone 13 assemblage, but the proportion of sheep was about the same. Cattle were often killed at 1–8 months or 30–36 months. These may have been surplus animals slaughtered for meat but there were a notable number of older animals from Zone 13. Most of the sheep were killed around the age of three when they would still have been able to raise lambs and provide wool. In contrast, most pigs were slaughtered between the ages of 1–2, with some animals kept as breeding animals. The bones of all species were heavily fragmented suggesting that once the meat had been removed the marrow was extracted from the bones.

Horse was more common than in the Bronze Age, and was used for riding and as beasts as burden but they were also eaten. The horse burial in pit 177193 in Zone 13 is unusual (Pl 3.29), but horse heads were placed with two later burials in Zone 6; the neonate in grave 176140 (Pl 3.36) and the 7–9 year old in grave 297080 (Fig 3.29). Relatively few placed deposits or Animal Bone Groups could be identified with confidence, but this placing of horses' heads in the graves of children suggests that the horse's head (with jaws) placed in Middle Iron Age pit 279145 in Zone 6 may have been a special deposit. Donkeys are rarely identified in Iron Age contexts as their bones are difficult to distinguish from the bones of small horses, but some possible examples were identified. Amongst them are two small and slender bones from the Early–Middle Iron Age enclosure in Zone 13. This date is a relatively early one for the identification of donkeys in Britain (see Vol 2, Strid, Chap 14).

A cut mark on one dog bone suggests that as well as being kept for herding and guarding, the animals were also eaten. Only a single red deer bone was found indicating that hunting was not an important activity, at least in terms of diet. Chicken bones were found in features within and west of the enclosure in Zone 13 (pits 156135, 168115 and SFB 174060), and these, like donkey, also represent relatively early identifications of the species. Wild birds were represented by a black or red-throated diver which may have been hunted, and crow, though the latter was possibly, as is frequently the case in Iron Age and Roman contexts, placed in a special deposit, in the bottom of the enclosure ditch in Zone 13 (see Vol 2, Strid, Chap 14).

As in the Bronze Age there was only very limited exploitation of marine resources. Small quantities of oyster shells and occasional examples of mussel, whelk, red whelk (buckies) and common periwinkle shells could all derive from collection at low tides or in shallow waters, probably in Pegwell Bay. Unusually for Iron Age sites in southern England a number of fish bones are present, which implies some sea-going capability. Although a few freshwater fish are known from the Glastonbury Lake Village (Coles and Minnitt 1995, 195; Jay 2008) they are generally so rare from British Iron Age sites that it has been suggested that they were taboo (Dobney and Ervynck 2007). The presence of a

number of fish bones of Early–Middle Iron Age date is therefore of some interest (see Vol 2, Nicholson, Chap 15). An Early–Middle Iron Age pit 173180 in Zone 13 included a few vertebrae from eel, herring and probably whiting, with one herring vertebra crushed as if it had been chewed. Pit 178070 which is probably Early–Middle Iron Age in date and in Zone 14, immediately to the east of Zone 13, included remains of fish of the herring family, a thornback ray and probably sea bass. The Early–Middle Iron Age pit in Zone 6 (173275) which contained mineralised plant remains and what may well be material from a byre also included a fish bone which is probably from a small ray. Several bones from sole and perhaps other flatfish came from another Early–Middle Iron Age pit 256029 in Zone 6. Some of the bones in this pit may also have been chewed. A dolphin sized cetacean from Zone 13 could also represent hunting in shallow waters or perhaps beach-combing. As bones of fresh and salt water fish have also been recorded recently from Middle–Late Iron Age contexts at Lewes, East Sussex (Swift 2011, 33), it is possible that the eating of fish may be a regional custom in the south-west.

Mortuary rituals

A number of burials were found, both in formal cemeteries and within pits in settlements, and they provide an important contribution to our knowledge of Iron Age mortuary rituals in Kent and beyond.

Middle Iron Age formal burials

A small Middle Iron Age inhumation cemetery was found in Zone 12 (Fig 3.45). Ten north-south aligned burials in shallow, oval or sub-rectangular graves formed a clear group. A further three, possibly four, burials nearby appear to be contemporary even though two of these graves, 153028 and 153040, were aligned east-west. Fragments of bone from what might be a further two individuals were also found in colluvial deposits. This suggests that there were at least 14, possibly 16, graves in the cemetery that may have extended to the north beyond the excavation area. Two of the burials were radiocarbon dated to the Middle Iron Age, burial 136034 (in grave 136033) which was in the main group 410–210 cal BC (2285±30 BP, SUERC-40287) and 153027 (in grave 153028) which lay to the south-west and was aligned east-west 380–200 cal BC (2215±30 BP, SUERC-40288). The latter date suggests that the burials that are not part of the main group are contemporary with it.

All but one of the burials was either supine or flexed, burial 166001 being prone. There are too few burials to provide a reliable estimate of the demography of the population using the cemetery but infants, juveniles, subadults and adults were all found. Certain and probable females and males are present in equal numbers (6:5) and children are well represented (5 of 16) individuals. This suggests that the cemetery was used by a 'typical' population. Four individuals from the cemetery in Zone 12 were subject to isotope analysis which indicated that all of them had migrated from their first recorded childhood places of residence (Vol 2, Millard with Nowell, Chap 13, Appendix 1), and this is discussed further below. As a number of graves intercut it seems likely that it was used over a period that was long enough for the location of individual graves within the burial area not to be visible.

In Zone 13 eight inhumation burials were found in the pits and quarries in the north and west of the excavation area (Fig 3.49–56). The radiocarbon dates indicate that these burials are contemporary with those in Zone 12 (see Table 3.5), but in Zone 13 some of the burials are in purpose excavated graves while others are in pits or quarries, contexts that are typical of many Iron Age burials. To the north of the enclosure in Zone 13, the flexed inhumation 248091 of a *c* 15–16 year old sub-adult male was found at the base of a pit (248087) that was cut by a pit that contained Middle Iron Age pottery (Fig 3.54). The burial was radiocarbon dated to the Middle Iron Age 400–200 cal BC (2255±30 BP, SUERC-40302). The crouched inhumation of a *c* 7–8 year old juvenile (248012) was buried in a nearby pit 248013 (Fig 3.53). The flexed burial of a *c* 35–45 year old possible male (200066) lay some 5.5m away in pit 200062. Unusually it was accompanied by a number of objects, all of which were in front of the torso (Fig 3.51). Part of the fragmentary remains a *c* 35–45 year old woman and a 1–2 week old neonate were found in quarry 159118 (burials 1591191 and 159124).

Immediately north-west of the enclosure the burial of a *c* 25–33 year old adult, possibly female, in grave 126127 (Fig 3.50) was radiocarbon dated to the Middle Iron Age (2200±30 BP, SUERC-40289). The flexed burial (246012) of a 45 year old or older man yielded a similar determination (2240±30 BP, SUERC-40301) (Fig 3.52). A 5–6 month old neonate (126143) was found in pit 126141 (Fig 3.50), though a fragment of a copper alloy ring in the grave may have been residual along with Early–Middle Iron Age pottery. The prone burial of a *c* 14–16 year old subadult (220093) (Fig 3.56; Pl 3.30) to the north-east of enclosure 134099 was radiocarbon dated to the Middle Iron Age (2230±30 BP, SUERC-40299). The nearby flexed burial of a *c* 16–25 year old possible female in grave 248037 may be of the same date. In addition, one of a group of pits to the south of the entrance to enclosure 134099 contained fragments of human bone (pit 248058).

Although many of the burials in Zone 13 were also from graves located amongst pits and quarries in a settlement, the percentage of the skeleton present is generally high and compares favourably with the burials from the cemetery in Zone 12. As is well known, the percentage of the skeleton of particular individuals found on Iron Age settlements varies markedly. As a result the remains have often been classified according to how much of the skeleton is present and these categories interpreted as representing different types of deaths and/or burials, or even as offerings. Most of the burials from both Zones 12 and 13 can be regarded as formal burials in deliberately excavated graves. The small quantities of bone from the quarries (burials 159119 and 159124 in quarry 159118) could represent

mortuary rites involving secondary burial or, particularly given the context they were found in, they may derive from formal burials that were subsequently disturbed. However, it is not clear why such a low percentage (*c* 26%) of the 16–25 year old buried in grave 248037 was recovered.

Grave goods were rare. The only certain example in Zone 12 is the iron ring or armlet on the left upper arm of the woman buried in grave 166005 (ON 2, Pls 3.21 and 3.35). Fragments of what might be a joiner's dog were also found in this grave and a small nail was found in 136003 and these objects might be from coffins. Five joiner's dogs were found in grave 123 at Mill Hill, Deal, which may date to the 1st century BC, though this was the only grave in the cemetery to contain such items (Parfitt 1995 110–11, 166, fig 60). Two fragments of a rough-out of a shale bangle were found in grave 166002 in Zone 12 but as they were not on the body they may have been incorporated in the fill of the grave accidentally. In Zone 13 a plain copper ring (ON 1532) and a small amulet made from a dog tooth were found close to the burial of a 5–6 month old child buried in pit 126141, and there was copper staining on the skull. Also in Zone 13 a shale bangle and parts of a second were found in Early–Middle Iron Age pit 200062 which contained the burial of a *c* 35–45 year old (Fig 3.51). In front of the body, possibly a man's, were a complete pot, three spindle whorls and a piece of iron rod or wire (ON 1503). As grave goods were rarely found with the Iron Age burials this represents an unusual assemblage. The number of objects recalls that found in the same pit (6132) as an Early–Middle Iron Age urned cremation burial at White Horse Stone, Kent, though those finds comprise a tool set and a piece of jewellery, all of which, including a pottery bowl, appear to have been placed on the pyre (Champion 2011, 235, fig 4.34). On balance it seems most likely that these objects were grave goods that symbolised the skills of the teenager that they were buried alongside rather than signifying offerings that symbolised the abandonment of the site (*ibid.*, 239). Lastly, a pierced and highly polished fragment of a cattle knee (carpal) bone was found with Middle Iron Age burial 205108 in Zone 19. It is possible that this was some form of amulet.

The burial grounds were not separated from settlements. Most of the burials in Zone 12 were made next to a hollow-way that was still in use (Fig 3.45), while those in Zone 13 were made in an activity area (and possibly also a settlement area) next to the trapezoidal enclosure that was still being occupied. The burial in Zone 19 was also made in or near to a settlement. In contrast, a series of burials were made in the infilled ditch of the Ebbsfleet enclosure (see below). Three were found in 2005 and two were radiocarbon dated to the Late Iron Age. Another grave was found in the work at Weatherlees Pond but this was disturbed by a medieval ditch. A double burial was found in Zone 4, where an older and a younger woman were placed facing each other. The younger woman (147256) was radiocarbon dated to the Late Iron Age (200–1 cal BC 95% confidence, SUERC-40286) but the fill of the grave also contained rim fragments from one or two flagons of Tiberio-Claudian date and also a coarseware bead rim jar of 1st or 2nd century AD date. It is not clear if this indicates that the second burial (147257) is later and the superimposition of the grave was fortuitous, or (and more likely) if the two burials were broadly contemporary but the grave was disturbed at a later date.

Pl 3.35 Middle Iron Age grave 166005 (Zone 12; view from west)

Disarticulated remains

The occurrence of disarticulated human remains on Iron Age settlements is well established so the presence of such remains in Zones 4, 6 and 7 is apparently unremarkable. However, while there are some remains of Early–Middle Iron Age date, most of the remains from Zone 6 are later than the formal burials of Middle Iron Age date in Zones 12 and 13 and earlier than the Late Iron Age burials that were in the top of the infilled Ebbsfleet enclosure ditch in Zone 4 and adjacent areas. This suggests that the rites practised in Zones 4, 6 and 7 were different.

Most of these remains are single bones or fragments and so could be disarticulated remains or the disturbed remains from formal burials of earlier periods, probably the Early–Middle Iron Age. They include the remains of a neonate, possibly one juvenile, and at least three adults from Zone 6, the minimum number of individuals being calculated on the presence of left femurs and parts of the skull. Some redeposited bone was also found in the south of Zone 7 but it does not alter the calculation of the minimum number of individuals. One of the isolated skull fragments in Zone 6, found in an Early–Middle Iron Age pit (258230), is of a 15–30 year old, possibly a woman, who was killed by a blow to the head with a blunt weapon (Vol. 2, McKinley, Chap 13, Pl 3.15). A skull fragment from the surface of a Late Iron Age/Early Roman cobbled surface (context 298103) bears cut marks and there are traces of canid gnawing on the limb from Middle Iron Age pit 247232.

There were some formal burials in Zone 6. One was of a neonate and the other two were of children, two of which were accompanied by horse's skulls. The 7–9 year old buried in grave 297080 had a horse's skull placed by its legs near to a tripartite jar or bowl. A 2–8 week old neonate buried in what may also have been a deliberately excavated grave (176140) had a horse's skull placed over its body (Pl 3.36). At South Dumpton Down the head of a young child buried in a grave within the settlement rested on a dog (Moody 2008, 124) and this hints that burying children with all or parts of animals may have been a local tradition.

Pl 3.36 Neonate burial in Early–Middle Iron Age pit 176140, partly covered by a horse skull (Zone 6; view from south)

The burials of children comprised three of the five found in Zone 6 that are regarded as being in *in situ*. The other two burials are the adults from well 263052 and pit 292075. The treatment of these bodies and of other Mid–Late Iron Age burials in the southern part of the Ebbsfleet peninsula was rather different. Pit 292075 contained one of the largest groups of Late Iron Age pottery in Zone 6 and the partial remains (54%) of a 30–40 year old man whose head and cervical vertebrae were missing, possibly because of peri-mortem decapitation, though there was no direct evidence for the latter. There is, however, peri-mortem sharp weapon trauma to the 1st lumbar vertebra. McKinley suggests that this could have been done after death; perhaps to speed the breakdown of the body, though if there were multiple wounds it could also have happened at the time of death. The bones had been gnawed by animals before this burial was fully covered (Vol 2, McKinley, Chap 13, Pl 13.12–3).

The upper, Middle–Late Iron Age fill of well 263052 contained some of the disarticulated remains (28%) of a possible older woman (263050); there was also evidence of animal gnawing on her upper body. Traces of gnawing were also found on the human remains from the eastern length of the Ebbsfleet enclosure ditch (1384) excavated in 2005 (Schuster and Dinwiddy 2009), to the east of Zone 6. These were found in three almost successive layers and may all be from a single adult male. The bones from the primary fill comprised most of the skull and parts of upper and lower limbs which were described as gnawed, bleached and cracked. The single long bones from the other two fills are described as animal gnawed and weathered respectively. The femur was cut by a knife and had been gnawed and polished, apparently through handling. The complete frontal bone of what was probably a woman was found on the base of the ditch in the adjacent section (1208). These remains were suggested to derive from graves that had been cut through when the Ebbsfleet enclosure defences were excavated.

Approximately 30m to the west of the defensive ditch the incomplete (35% present) and semi-articulated skeleton of a teenager was recovered, also in 2005, from the edge of a smaller Late Iron Age ditch (1892) that runs parallel to the defensive ditch and which may have been contemporary with it. This was suggested to have been in a grave (1931) whose cut was not seen during excavation. However, the bones are described as being in 'disarray' with their weathered condition suggesting that they had been exposed. Some of the teenager's bones were also found in the fill of ditch 1892. Fragments of the lower limb and axial skeleton of a man were found in the lower fill of the southern length of the defensive ditch (3131), immediately east of Zone 4, and a femur was found in the secondary fills (325) of the ditch in the section (314) excavated in Weatherlees Pond to the west.

Although they comprise a small sample, probably a minimum of just seven individuals, it is clear that none of the Middle–Late Iron Age human remains from the settlement in Zone 6 or the Ebbsfleet enclosure (excepting the inhumations buried in the top of the infilled ditch) were buried in graves excavated for that purpose. The bones of the larger groups are often gnawed and there is some evidence for weapon trauma, including possible decapitation. It is possible that some of the corpses had lain unburied before some of their remains were either buried or became incorporated into features through natural processes. This could suggest that the Iron Age settlement in Zone 6 came to a violent end (see below).

Cremation burials

A very small quantity of cremated bone (17.8g) from posthole 189050 of an irregular four-post structure (169008) in Zone 11 returned a radiocarbon date of 360–50 cal BC (2135±30 BP: SUERC-40272). Another posthole in the group 189053 contained 2.1g of bone. The bones from both features were identified as being from subadult/adults. Another feature in the same area (171023) contained 46.7g of bone and pyre debris. The bone was from a subadult/adult >15 years old and it is possible that all the bone is from the same individual. This structure was one of two isolated four-post structures in Zone 11 (the other being 169007). The calibration of the date is very wide but could fall in the earlier 1st century BC when cremation burial first began to be practised regularly in southern England (Fitzpatrick 1997), but there are also occasional earlier finds. One is from Wanlip, Leicestershire which, perhaps coincidentally, was also associated with a four-post structure. Charcoal from amongst this burial returned an Early Iron Age date of 800–410 cal BC (2505±60 BP, Camb.Q-3274; Beamish 1998, 13–16, 28–30, fig 12; 17). Another one is from White Horse Stone in Kent where the urned burial in pit 6132, which was associated with a group

of tools and a bronze ring-headed pin, was dated to 460–160 cal BC (2279±60 BP, GU-9088; Champion 2011). Otherwise the earliest cremation burials from the scheme seem to date to end of the Iron Age or early Roman period, as shown by burial 147141 in Zone 11 (see Chap 4), just within the later range of the radiocarbon date of 160 cal BC–60 cal AD (2025±30 BP, SUERC-40271)).

Discussion of mortuary practices

Formal inhumation burial was long thought to be rare in Iron Age Britain and found only in a few regions, such as Dorset and Yorkshire, and then only in certain periods. Only Cornwall seemed to have a long tradition of inhumation burial. However, a small number of Iron Age inhumation burial cemeteries have been identified in southern England in recent years (Fitzpatrick 2010, 18–21). These include the cemetery or cemeteries at Mill Hill, Deal (Parfitt 1995) which is dated by both grave good and radiocarbon dates to the 3rd–1st centuries BC. Where the chronology of the cemeteries is based on radiocarbon dates, as at Yarnton, Oxfordshire (Hey *et al* 1999; Hey *et al* 2011) the dating is typically to the Middle Iron Age or slightly earlier and the burials from Zones 12 and 13 are consistent with this dating. Most of the inhumation cemeteries currently known contain more than 20 graves and appear to have been for a 'normal' population, although in some cases more burials have been identified as male than as female.

In Kent, and in particular East Kent, there has been a much greater increase in the number of burials known. Small groups of formal inhumation burials include the possibly earlier burials (5th–4th century BC) from Saltwood Tunnel near Folkestone (Champion 2011, 232–5), a group of five burials apparently of the same date from North Foreland, Thanet (Moody 2008, 124), and the small Middle Iron Age cemetery at Cliffs Ends Farm close to Zone 13 with at least six burials (McKinley *et al* 2013). Late Iron Age cemeteries are known adjacent to Zone 24 at Tothill Street, where a cemetery containing at least 11 burials is suggested to have started in the 1st century BC and to have continued in use into the Roman period (Gollop and Mason 2006; Bailey 2010), and at Thanet Earth, Minster where a cemetery of 24 inhumation and one cremation burial is dated to the Late Iron Age (Rady 2010; Weekes 2010, 358). A further cemetery which is suggested to be Late Iron Age and to have contained as many as 20 burials is known at Highstead near Sittingbourne (Vale 1987). Small ring-ditches have been found at Mill Hill, Deal and Thanet Earth.

In comparison with the rest of southern England these finds from Kent, which include at least five formal cemeteries: Zone 12, Cliffs End Farm, Mill Hill, Thanet Earth and Tothill Street, represent a large number. This confirms suggestions that formal inhumation burial was more common in East Kent than in some other regions (Champion 2007b, 123). The five or six burials cut into the top of the infilled Ebbsfleet enclosure ditch indicate that the rite continued to be practised until at least the turn of the millennia and some of the burials from Zone 19 suggest that it may have continued into the Roman period.

At the same time burials were made in storage pits in or near to settlements. In addition to the examples from Zone 13, other examples are known on the Isle of Thanet at South Dumpton Down (Perkins 1995b, 469), Fort Hill, North Foreland and Trinity Square, Margate (Moody 2008, 124, fig 72–3), and possibly at Hartsdown, Margate (Gardner and Gibson 2008). It seems that these burials were all formal inhumation burials rather than representing a secondary burial rite. The tight linear arrangement of the cemetery in Zone 12 has not been noted before amongst these southern cemeteries, but the Late Iron Age cemetery at Thanet Earth is aligned along a hollow-way (Rady 2010, 8) and in east Yorkshire some of the Arras culture cemeteries were laid out either alongside seasonal streams or trackways.

Cremation burial is widely thought to be typical of the Late Iron Age in south-east England, but only a single mid–Late Iron Age example was found, in Zone 11. This may be fortuitous, but in combination with the evidence for the continuing practice of inhumation it further hints that the Middle–Late Iron Age burial rites of East Kent may have followed a distinctive local tradition. Against this background the contexts and condition of the human remains from Zone 6 and the Ebbsfleet defensive enclosure appear markedly different. It is possible that the disarticulated remains represents a burial rite that was very localised, either in place or in time; the body of teenager of Middle Iron Age date found at Cliffs End Farm is suggested to have been exposed (McKinley *et al* 2013, 176, fig 6.13) and part of a human skull is known from the Late Iron Age site at Thong Lane, Gravesend (French and Green 1983), but the condition of the bones at Zone 6 suggest that there may be other explanations.

Although excarnation is often cited as the explanation for disarticulated remains on British Iron Age settlements (eg, Wilson 1981; Cunliffe 1992; Carr and Knüsel 1997; Craig *et al* 2005), a detailed study has shown there is actually little evidence for gnawing or weathering on most bones, which suggests that the disarticulation of the bones resulted from a different form of secondary burial (Madgwick 2008). The weathered and gnawed bones from the Ebbsfleet enclosure all date to a late stage in the life of the settlement. It is possible that the three more complete corpses had lain unburied for some time. Two or three of the Middle–Late Iron Age individuals from the Ebbsfleet peninsula have evidence of cuts to the bone and traumatic wounds. Such wounds are now widely, if infrequently, documented in the British Iron Age (Dent 1983; Boylston 2000; Vol 2, McKinley, Chap 13). However, decapitation, which was perhaps the cause of the death of the man eventually buried in pit 292075, is less common, though not unknown (Redfern 2011). It hints that the people whose remains were found at Ebbsfleet may have met a violent end.

Material culture

Pottery dating to the Earliest Iron Age was not common, which may reflect the short duration of its use

(*c* 8th–7th centuries BC). The forms are typically coarse jars and fine bowls. Some of the bowls are decorated with chevron or geometric patterns and their surfaces were smoothed or burnished. Some red-finished surfaces may have been created using haematite. On the basis of the material from nearby Cliffs End Farm (Leivers forthcoming) a date in the 8th or more likely the 7th century has been suggested for this pottery. The presence of small groups of this material in Zone 4 is of interest as they may just post-date the Late Bronze Age hoards which may have been deposited in the earlier 8th century.

The Early to Middle Iron Age pottery (see Vol 2, Fig 8.3–6) is characterised by the appearance of round shouldered bowls and jars and the use of pedestal bases, all in a variety of fabrics. This material is best represented in the groups from pits in Zone 13 but is also found in Zone 6. While the succession to Middle Iron Age pottery in the 4th or 3rd centuries BC was clearly identifiable in Zone 13 by a trend to more angular shoulders and the use of quartz sand, it was very difficult to isolate well stratified groups in Zone 6 due to the long use of the settlement and the extensive disturbance caused by later features. The extensive coin series from Zone 6 shows that occupation continued into the first half of the 1st century BC but it has proved difficult to isolate groups that are typologically – as opposed to chronologically – distinguishable as Late Iron Age until the later 1st century BC (see below).

There was limited evidence for iron working (Vol 2, Rubinson Chap 4). The best evidence is in the form of a hooked billet-type iron ingot from Zone 6. These ingots were used for making heavier, squat objects (Crew 1994; 2000). The small, though not well-dated quantities of smithing slag, hearth lining, hammerscale, a smithing hearth bottom and a possible piece of iron ore from Zone 6 indicate that smithing was undertaken there. Hearth lining with iron slag adhering to it was also found in Zone 13.

The iron tools found include knives, and from Zone 6 rare examples of a fragment from a pair of shears and a scythe blade as well as several reaping hooks (see Vol 2, Scott, Chap 3, Fig 3.2, 26; Scott below). These may well have been made on the settlements where small-scale iron working was typically carried out (Ehrenreich 1985; Salter and Ehrenreich 1984). Other metal objects include a few swans neck and ring-headed pins from Zones 6 and 13 (Vol 2, Figs 3.3, 59 and 3.7, 14), but the only brooches were the iron examples from Zone 6.

Textile manufacture is demonstrated by two weaving combs found in Zone 6 and five spindle whorls from Zone 13. One of the combs from Zone 6 was made of antler and found in an Early–Middle Iron Age pit (193127) (Vol 2, Fig 7.3, 6), the other was of bone and came from a Middle–Late Iron Age pit 288151. These combs, which are usually of antler, were used in textile manufacture, perhaps for making braids rather than for beating up the weft on a warp-weighted loom. Bone points such as that from Early–Middle Iron Age pit 302077 in Zone 6 (ON 2987) could have been used for a variety of purposes but they have often been suggested to have been used in textile working, for example as pin beaters to level out the weft on the loom or as the points of shuttles in making textiles (Tuohy 1999; 2004). The worn but unworked metatarsals and metacarpals of sheep or pig may also have been used in textile working. A bone needle from an unphased (but perhaps Iron Age) layer in Zone 6 (Vol 2, Fig 7.3, 7) could have been used in working textiles or leather. All five spindle whorls from settlement contexts in Zone 13 were Early–Middle Iron Age in date, as were the three examples placed with burial 200066, also in Zone 13.

There is also evidence for the working of cattle bone into tools in Zone 6, while a handle (Vol 2, Fig 7.3, 17) and other bone objects from Zone 12 and two bone pins from Zone 13 (Vol 2, Fig 7.3, 18, 21) demonstrate the working of bone as a craft activity in these settlements. Salt working was widely represented by evaporating vessels and other vessels, tongue-shaped clips to secure vessels during the evaporating process and triangular perforated oven bricks (Poole below). The bricks are argued to have served as pedestals that either supported the vessels directly or carried plates on which the vessels were placed. The great majority of features that contained these bricks (18 of 22) contained other objects of fired clay. Pieces of clay from the hearths were also found but it was not possible to say what form they took.

Saddle querns were found in Zones 6 and 13, with one from Zone 6 and the two from Zone 13 being in Early–Middle Iron Age contexts (Vol 2, Fig 6.1–4; Shaffrey below). A number of other examples from unphased contexts are also probably prehistoric. All are made from Greensand from the Folkestone Beds and reflect the importance of this source in the later Iron Age (Keller 1989), with an Early–Middle Iron Age find from pit or tree-throw hole 151001 in Zone 3 being of glauconitic sandstone from the same beds. A Greensand rotary quern from pit 291130 in Zone 6 is also dated to the Early–Middle Iron Age, when rotary querns were first adopted in Britain. A small fragment of lava found in the upper fill of pit 211043 in Zone 13 is almost certainly from a quern from France or Germany. The only pottery from the pit was Middle Iron Age and this would represent the earliest example of an imported lava quern found in Britain. Although several examples have been previously claimed as prehistoric imports, either Late Neolithic or Late Iron Age, the actual date of the contexts are invariably uncertain (*cf* Fitzpatrick 2011, 232 for the Late Neolithic). The fragment from Oldbury may be from a post-Roman strengthening of the Iron Age rampart, which certainly should not be dated to AD 43; *cf* Thompson 1986). In this regard the fact that pit 211043 was cut by a later feature may be significant. Four greensand saddle quern fragments were found in Early–Middle Iron Age contexts. Three of these, plus a further fragment of a rotary quern of the same date, were from the Folkestone Beds.

The local chalk was also worked (Fig 3.72) and there is some evidence of this from Zone 6 in the form of Early–Middle Iron Age chalk debris and a partially

perforated disc. A completely perforated disc was also found in Zone 13 and was used as a spindle whorl. Several weights were found and the larger ones are perforated towards the top; these could have been used as thatch weights, counter weights for doors or wells, or on fishing nets.

More specialised production may be demonstrated by the shale bangles, several of which were found (Vol 2, Table 7.6; Fig 7.2, 1–5). A complete shale bracelet was found in Early–Middle Iron Age grave 200062 in Zone 13 along with a fragment of a smaller one, both placed in front of the burial, which was of an adult, possibly male (Fig 3.51). In addition, two pieces of a rough out for a shale bangle were also found in Middle Iron Age grave 166002 in Zone 12. Fragments of bangles, both finished and unfinished, came from other Iron Age contexts in Zones 6 and 13, the earliest being of Early–Middle Iron Age date in Zone 6 (Vol 2, Table 7.6; Fig 7.2, 2–3). There was also a large piece of unworked shale (from Early–Middle Iron Age context 274067) in Zone 6. The source of this shale has been assumed to be Kimmeridge in Dorset (*cf* Cunliffe 1982, 49–50, fig 15) and this would imply the import of unworked blocks.

An unworked fragment of shale was found in the Middle Bronze Age Dover Boat (Bown *et al* 2004, 216), however, evidence for extensive shale working has been discovered at a Late Bronze Age settlement at Burham, Kent (Milward 2009). As Champion has noted, there are sources of shale other than Kimmeridge and he cites a potential one near Boulogne (2011, 215). In the Iron Age the presence of shale manufacturing waste in the Somerset Lake Villages indicates local production, perhaps using imported materials (Coles and Minnitt 1995, 160–1), and the production of shale vessels in Bedfordshire in the Late Iron Age exploiting local outcrops has been suggested previously (Kennett 1977). It is certainly probable that at least some of the black shale bangles and vessels found in Normandy were manufactured locally using outcrops of the same beds as those exploited at Kimmeridge, Dorset (eg, Lefort and Marcigny 2008; Paris *et al* 2001).

Rather than the centralised production or the export of raw materials in the Iron Age, a pattern of regional production across Europe using a variety of black shale-like materials seems increasingly likely (Baron 2012). The presence of unfinished Late Bronze Age and Iron Age shale objects in Kent, including at Hartsdown Community Woodland Scheme, Margate (Perkins 1996, 277, fig 6, 3), suggests that it may have been one region in which local 'black shales' were worked. In Dorset the shale was worked using flints. This means that the possibility that the small group of flakes from Iron Age ditch 299019 in Zone 7 were made in the Iron Age should be considered rather than the flakes being dismissed as residual (*cf* Young and Humphrey 1999).

Apart from the Greensand querns, imported materials were rare. The hooked billet is a form of trade iron usually of Iron Age date while a tiny, possibly intrusive, fragment of glass found in grave 153043 in Zone 12 could be from a bead. Beads are well known from 'Arras culture' Middle Iron Age inhumations in Yorkshire (Stead 1979, 79–81; 1991, 92–3).

Mobility and migration

Four individuals from the cemetery in Zone 12 were subject to isotope analysis (see Vol 2, Millard with Nowell, Chap 13, Appendix 1). The strontium isotopes do not provide any evidence for migration; all eight results (two from each individual) are within the range of values known for south-east England. In contrast, there is a wide variation in the values of the oxygen isotopes which is interpreted by Millard and Nowell as indicating migration (see Vol 2, Chap 13, Appendix 1).

The oxygen isotopes indicate that when their 3rd molars formed between the ages of about 9 and 12 years, one of the females (166004) and the two males (153027 and 153054) were all living in different environments, all of which were colder than Thanet. At some unknown times they each moved from those places and were subsequently buried on Thanet. For the female (166004), the difference in values between her 3rd molar and her 2nd premolar, which formed between the ages of 3–6 years, is sufficient to suggest that she had moved to an even colder environment in the meantime. The males may also have moved between these ages but the differences between the readings for the two teeth are not conclusive. In contrast, female 136034 seems to have moved to Thanet in her childhood. When her 2nd premolar formed she was living in a place with a colder environment than Thanet but the values of her 3rd molar are consistent with the Thanet environment, where she too was eventually buried. The range of results would seem to suggest that the people had lived in different places rather than one single location though it should be remembered that the variations in isotope results do not correlate to physical geographical distances.

As Millard and Nowell show, these results may be compared with Millard's earlier analysis of the cemetery at Cliffs End just 600m away to the east (*cf* McKinley *et al* 2013; Millard forthcoming). The radiocarbon dates indicate the two cemeteries are contemporary (*c* 400–200 cal BC), though only two of the 13 burials in Zone 12 were dated. At Cliffs End all seven individuals of Middle Iron Age date were radiocarbon dated and their isotopes analysed. The oxygen isotopes indicate that during their childhoods five of the individuals had also lived in colder environments and one (Cliffs End 243204) in a warmer environment. The oxygen isotopes of the seventh individual (Cliffs End E3677) are within the inferred local range but their strontium isotope results suggest that they too had moved to Thanet. The 2nd premolars of two of the seven individuals are consistent with them having lived on Thanet at this age before moving away and then returning to the island. There is a considerable range in the oxygen isotopes from both sites but all of the results from Zone 12 are within the range identified at Cliffs End.

Although the radiocarbon dates from the two cemeteries are contemporary, there are differences in the burial rite. The majority of the graves in Zone 12 were in a row, with a few outliers, and most were aligned north-

south. Most of the burials were supine though some were either prone or flexed. At Cliffs End the graves were all within a large hollow (2018) which had been used for mortuary rites in the Late Bronze Age and Early Iron Age. Although the graves were also aligned broadly north-south, five of the six certain formal burials were flexed and lay on their left side; the sixth was extended on their left side. The burials were mostly unaccompanied, the exception being Cliffs End 3660 which had been placed over parts of a dismembered horse (see McKinley *et al* forthcoming), recalling the horses' heads placed with the burials of children in Zone 6. The Iron Age cemetery at nearby Thanet Earth (Rady 2010) was, like that in Zone 12, a linear one and the isotope analyses from it indicate some mobility but not on the scale suggested at Zone 12 and Cliffs End.

The degree of mobility suggested by the isotope analyses is significant. At Cliffs End all seven individuals radiocarbon dated to the Middle Iron Age moved from their childhood residences, five of them over considerable distances. All four of the individuals analysed from Zone 12 had also moved from their childhood residences. The isotopes cannot provide any information on journeys made after the age of about 12 when the last permanent teeth begin to erupt.

This evidence is provided almost entirely by oxygen isotopes. In only one case, at Cliffs End, do the strontium results indicate mobility (Cliffs End 3677), and here the oxygen results are within the inferred local range. Individual 243204 at Cliffs End would appear to have lived in a very hot environment but otherwise the oxygen results consistently point to an environment colder than that of Thanet.

There is little comparative data from Britain. Most isotope analyses of Iron Age populations in Britain have been of stable isotope analyses to examine diet (eg, Jay and Richards 2007; Stevens *et al* 2010) and the only region in which it is possible to assess mobility is Yorkshire (Jay *et al* 2007; 2013). The Yorkshire burials are also radiocarbon dated to the Middle Iron Age, but while those analyses indicated some mobility, some probably at an elite level, it is not so frequent as that recorded on Thanet, or over such long distances. While the two Thanet cemeteries analysed to date cannot be taken as typical of the Iron Age population of the island, the most economical explanation of the results is that they reflect the location of the island between the Atlantic Ocean and the North Sea, and at the mouth of the Thames Estuary (eg, Perkins 2006; 2007).

The differences between the individual oxygen isotope results does not suggest a common origin for those who came to the island, or a shared destination for the few who left Thanet as children and returned subsequently. Millard and Nowell (Vol 2, Chap 13, Appendix 1) suggest that the most likely region that the four individuals buried in Zone 12 came from is the southern margins of the North Sea, the Baltic region or southern Sweden, though the values of 153027 are also compatible with northern Britain. However, as noted previously with regard to Cliffs End where the flanks of the Alps were suggested as possible location (McKinley *et al* 2013), the oxygen results from Zone 12 are also compatible with parts of central Europe. The suggestion of a northern origin for the individuals from colder climates is based on the size of geographical area consistent with the results of single individual (3656) buried at Cliffs End in the Early Iron Age, and even then an Alpine origin cannot be discounted (McKinley *et al* 2013, 167–8, fig 6.6).

In the current state of knowledge and with the uneven distribution of isotope data across Europe and Scandinavia, it is not possible to be confident in preferring one region over another. In this regard isotope analyses are at present rather better at establishing where individuals did *not* come from rather than where they did come from. The burial rites and the grave goods provide other avenues that can be explored but these need not have any direct correlation with the isotopes.

As discussed above, it is now clear that inhumation was a relatively common burial rite in East Kent, including Thanet, in the Middle–Late Iron Age. The earliest burials are the small groups from North Foreland on Thanet (Moody 2008, 124) and Saltwood Tunnel, near Folkestone, which seem likely to be of 5th or 4th century date (Champion 2011, 232–5) and there are also two 5th century formal burials at Cliffs End (McKinley *et al* 2013, 162, tab 6.1). In the larger cemeteries such as the one in Zone 12, the burials are often extended and none of these have yet been dated before the 4th century. This evidence would suggest that the inhumation burial was adopted in the 5th century BC, though in view of the small number of radiocarbon dated unaccompanied burials from East Kent the possibility that the rite was practised continuously from the Late Bronze Age cannot be excluded. While some disarticulated remains within settlements have been dated to the 8–6th centuries BC, only one formal burial has yet been dated to this period, grave 5 at Mill Hill Deal, and the difficulties in calibration mean that there is a wide date range of 765–385 cal BC (2390±60 BP: HAR-8444; Parfitt 1995, tab 46) for this individual. However, irrespective of when the rite was adopted, the inhumation rite used for the Middle Iron Age burials in Zone 12 and at Cliffs End appears to be an existing one and not a new and intrusive 'foreign' rite.

There are very few grave goods from the Zone 12 cemetery; some iron nails or other fittings that could be from coffins were found in two graves, and an iron arm ring, which was also from one of these graves (166005). The ring itself does not have any distinguishing features but with the possible exception of a bronze armlet and a shale armlet from the Jordan Hill, Weymouth, Dorset cemetery, which is as likely to be Roman as Iron Age in date (Whimster 1981, 260), arm rings are not known from British Iron Age burials. This suggests that the ring indicates a foreign style of dress (Pl 3.21).

It is difficult to assess how commonly such ornaments were worn in the two regions (Scandinavia or the flanks of the Alps) suggested as likely childhood residences for the individuals from colder climates

buried at Cliffs End because of the different burial rites. Throughout the pre-Roman Iron Age in northern Germany, Poland and Scandinavia, the usual burial rite was cremation. Pyre goods and grave goods are rare and often the only objects found are the pots that frequently contained the cremated bone. In contrast, inhumation was the most frequent rite in the Alpine region, and in the early La Tène phase (*c* 475–250 BC) in western Switzerland females were commonly buried with finger-rings, and bracelets and upper arm rings on their left arm. The bracelets and arm rings are usually made of bronze or glass. Further east, from Bohemia to Romania, bracelets and arm rings were also worn on the left arm and these were often made of iron or lignite, but they are only one part of the costume. Bracelets were often also worn on the right wrist and bangles were also worn on both ankles (Lorenz 1978). While this evidence offers some support for an Alpine region, or more broadly 'Celtic' style of dress for the woman buried in grave 166005 in Zone 12, it does not provide an exact match as on the Continent the dead were typically buried wearing more than one ornament and in the Alps the bracelets were usually made of bronze or glass and not iron.

Turning to the wider context, almost no evidence has hitherto been adduced for contact between Britain and the North Sea, the Baltic region and southern Scandinavia at any point in the Iron Age. Accordingly, Perkins suggestion that the hones and whetstones found in the nearby Iron Age settlement at Hartsdown Community Woodland Scheme, Margate were from Scandinavia might acquire a new significance. He also suggested that a cowrie shell from the site indicated connections with tropical seas (Perkins 1996, 273), though cowries can be readily found around the coast of Britain, particularly on the west.

In contrast, there is more evidence for contact between Kent and western Europe, which is one of the regions through which people from the Alpine region may have travelled before reaching these islands (Haselgrove 2002). The indicator found most frequently is the Early Iron Age pottery of Kent, which continued in use into at least the 4th century BC, and so overlaps in date with the date of the burials from Zone 12. This pottery is regarded as having strong connections with north-eastern France (Champion 2011, 166) and the rusticated decoration widely found in East Kent is clearly of continental derivation (eg, Bennett *et al* 2007), as are the polychrome wares. Both these types are found in Zones 6, 13 and 19, and polychrome ware has also been recorded nearby at Margate (Moody 2008, 131, fig 77), and these provide the best local evidence for cross-Channel connections, perhaps alongside the possible shrine in Zone 13, which also has evidence for the early introduction of fowl.

Direct evidence for 3rd century connections in East Kent comes from the earliest Celtic coins found in Britain. These Philippus imitations were made in Gaul and though some of them very probably arrived in the 2nd century BC alongside Gallo-Belgic A and B issues, there are sufficient finds to indicate that some of them arrived in the 3rd century. The British distribution of the Philippus imitations is firmly centred on East Kent (Fitzpatrick 1992, 3–6, fig 1; Haselgrove 1993; 1999; Sills 2003, 122–3, map 10).

Metal objects provide another source of evidence. A La Tène I brooch found at the Mill Hill, Deal cemetery dates to *c* 300 BC and has been suggested to be an import from western Switzerland (Hull and Hawkes 1987, 117–19; Stead 1995, 95); it is broadly contemporary with the silver finger-ring from the Park Brow, West Sussex settlement which is of a distinctively Swiss type (Stead 1984, 62). The Deal brooch is decorated with coral from the Mediterranean as are several of the items found in grave 112 in the same cemetery. The decorated objects in this well-furnished grave comprise one of the most important groups of 3rd or even 4th century BC Celtic art in Britain and their styles have strong continental connections (Stead 1995, 89–95; see Garrow *et al* (2009, 103)) for the revised, earlier, dating including a single radiocarbon date OxA-17506: 2158±28 BP (360–280 cal BC at 39.2%; 260–100 cal BC at 56.2%). The connections evidenced by the metal objects can be far reaching. The ritual headdress found in grave 112 belongs to a group whose distribution is also insular (Stead 1995, 73–86), but the only comparable object currently known was excavated in a shrine at Roseldorf in lower Austria (Holzer 2009). Another of the Mill Hill graves (X2) (dated to 380–200 cal BC; OxA-17284: 2216±28 BP: Garrow *et al* 2009) contained a pair of bronze spoons, a type of ritual object found almost exclusively in Britain and Ireland. The only example known from continental Europe is from a 3rd century grave at Pogny/La Chausée-sur-Marne, Marne in northern France (Fitzpatrick 2007, 290–7).

Objects found further up the Thames Valley also indicate influences that are likely to have passed through Kent. For example, the mouths of some sword scabbards found in the Thames at London are decorated with a pair of opposed mythical beasts, while the surface of other scabbards is decorated with a technique known as laddering and some swords have punched decoration (chagrinage). These motifs and techniques have pan-European distributions that stretch across the 'Celtic' world from Britain to Romania and southern France and Italy (Stead 1984, 47–50). The mechanisms underlying these distributions include trade and exchange, but migration and mercenary service that stretched deep into the Mediterranean and as far east as Asia Minor and the Nile delta is also well documented by historical sources. It is possible, for example, to identify the burials of individuals who returned to the Paris Basin having served in Italy as mercenaries (Ginoux 2009).

As this network included large parts of the Mediterranean it could also encompass the individual from Cliff Ends (CE 243204) who spent at least part of their childhood in a warmer environment. However, a possible link with Iberia is offered by the gold ornament (ON 2711) from Zone 7. While this might be a Late Bronze Age 'lock-ring', it has similarities in both its shape and form with Iron Age gold ornaments from

Spain and Portugal though these are usually smaller. Iberian connections are shared by five or six separate finds of Iron Age gold ornaments from southern and eastern Ireland (Cahill 2006, 293–303; 2009 and pers. comm.), to which may be added the less certain evidence of the resin in the hair of the Middle Iron Age bog body from Clonycavan, Co. Meath (392–201 cal BC; determination not given) which was probably made from *Pinus pinaster* (Maritime pine) which grows today in south-west France and northern Spain (Giles 2009, 84–5; Kelly 2012, 234–5), and the famous find of the skull of the Barbary Ape from the royal site of Navan, Co. Armagh, dated to 390–20 cal BC (2150±70 BP: OxA-3321; Waterman 1997).

Irrespective of the childhood residences of the people buried in the cemetery in Zone 12, these links in the material culture reflect networks of connections within which their journeys could have been made. These would favour a central European rather than northern or Scandinavian residence and despite Thanet's location, a short Channel crossing rather than journeys along the seaboards of the Baltic and the North Sea or the Atlantic. But it is possible that the isotopes indicate links that are not otherwise reflected in the archaeological record. It is salutary to recall that even where contemporary archaeological evidence has been confidently interpreted as indicating migration, the isotopes have not always lent support to this (eg, Scheeres *et al* 2013).

The Ebbsfleet defensive enclosure

by A P Fitzpatrick

The ditches of a large defensive enclosure of Late Iron Age date were identified on the west shore of the Ebbsfleet peninsula in Zones 4 and 6 (Pl 3.37). The peninsula is of Thanet Sands and the enclosure is sited on what was the bank of the former Wantsum Channel, which formed the western side of its defences. The routes of the southern and eastern circuits of the enclosure are well established but the alignment of the northern defences is less clear. As a result the full circuit of the Ebbsfleet enclosure is not known but it seems likely that it defended an area of not less than 20 hectares. This represents a major defensive enclosure which is comparable in size to many hillforts (Fig 3.63).

Previous work

The enclosure was first identified in 2005 (Egging Dinwiddy and Schuster 2009) when excavations at the neck of the Ebbsfleet peninsula in advance of a water pipeline found a large ditch of mid–Late Iron Age date in two locations 250m apart. The ditch was up to 8m wide and 2m deep.

The lengths of ditches were on different alignments. The southern length (3733) at Weatherlees Waste Water

Pl 3.37 Late Iron Age (and later) ditch 190288 in centre, crossing Zone 4, with Zone 5 left and Weatherlees Pond right; Ebbsfleet Hill (wooded) bottom left (view from north-west)

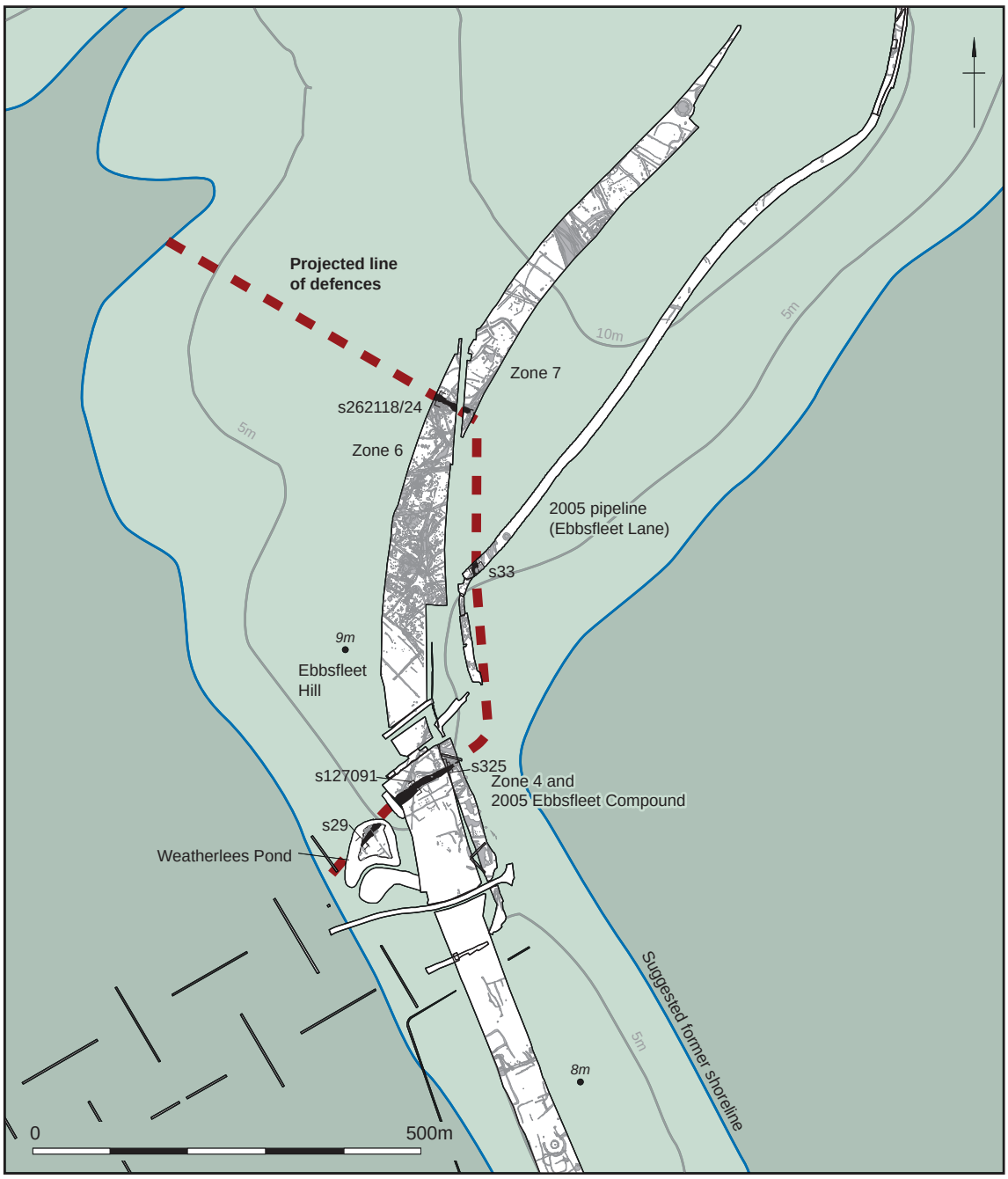


Fig 3.63 Early, possibly 1st-century BC enclosure on the west side of the Ebbsfleet Peninsula, shown in relation to probable former shoreline

Treatment Works (WWTW) was aligned approximately east–west. The northern length at Ebbsfleet Lane, through which two sections (1208 and 1384) were excavated, was aligned south-north. It was suggested that the lengths of ditch were part of the same enclosure, of unknown purpose, which would have been approximately square and up to 14 ha in size (Egging Dinwiddy and Schuster 2009, 112). A further section of the southern east-west aligned ditch was excavated in 2008 in advance of the creation of a new pond at Weatherlees WWTW (see above Weatherlees Pond).

The southern length of ditch was further examined in 2010 through two sections in Zone 4. No comparable ditches were found to the south in Zones 1–3 but a length of east-west aligned ditch of similar size, shape and date was found in Zones 6 and 7 and a section was excavated in Zone 6. This length of ditch is interpreted as the northward continuation of the ditch excavated in Ebbsfleet Lane as no comparable ditches were found further to the north, either in Zones 7 and 8 or in the pipeline excavation in 2005. The lengths of ditch in Zones 4 and 6 are 500m apart.

As the full circuit of the defences is not known, it cannot be demonstrated conclusively that all the ditches belong to the same enclosure, but as all the sections are of a similar size, shape and date it seems beyond reasonable doubt that they are parts of the same work. It appears that they form a roughly semi-circular defence that enclosed part of the east side of the Wantsum Channel with an area in excess of 20 ha (Fig 3.63).

Topography

In the Late Iron Age the topography of the Ebbsfleet peninsula was very different, with the Wantsum Channel separating the peninsula and all of the Isle of Thanet from the mainland (Perkins 2006; 2007; Moody 2008, 35–52; Clarke *et al* 2010, 16). In the late Roman period the Saxon Shore forts of Richborough and Reculver stood close to the southern and northern ends of the Channel, and in the Middle Ages the Wantsum was one of the most important routes in the south-east and the town of Sandwich at its eastern mouth was an international port. The Wantsum allowed access from the English Channel to the outer Thames estuary, avoiding the rounding of North Foreland at the north-east tip of Thanet, and the waters around the east mouth of the River Stour, Sandwich Haven, provided a sheltered anchorage.

The name River Wantsum comes from the Venerable Bede's 8th century description of the *fluminis Uantsumu*, but the term only came into widespread usage in the 18th–19th centuries to describe what was by then the former sea channel. In the Middle Ages the channel was described as 'the sea' or 'the king's river to Northmouth' (Clarke *et al* 2010, 14).

However, a combination of natural silting partly due to the development of Stonar Bank, which steadily blocked the southern mouth of the Wantsum, and systematic land reclamation eventually led to the disappearance of the channel and the reuniting of the Isle of Thanet with the mainland. The extent of these changes is well illustrated by the history of the town of Sandwich. In the medieval period it was an important coastal port and administrative centre on the south bank of the Wantsum Channel. Today Sandwich stands 3km from the sea (Clarke *et al* 2010).

Reclamation work on the Wantsum Channel may have started in the Roman period, but the first extensive works were undertaken by the Augustinian monks of the priory at Minster-in-Thanet in the 12th and 13th centuries. This 'inning' and the building of the Monk's Wall, a sea wall on the western side of Stonar Spit and within the former sea channel, led to the Wantsum becoming progressively smaller until by the mid-15th century it was barely navigable to sea-going vessels. Today the River Stour which flows through the Minster marshes into the south of the former Wantsum Channel is only a small river.

Before these changes, the shape of the Ebbsfleet peninsula would have been dramatically different (see Fig 4.119). The peninsula would have been narrower and possibly shorter, surrounded by water and perhaps mud flats and marshes. Although Late Iron Age sea levels were very slightly lower than modern ones, it also seems likely that in the Iron Age Weatherlees Hill was an island in the Wantsum, with a smaller un-named former island (called 'Ebbsfleet Island' here) between it and the peninsula.

The size, shape and location of the whole of the eastern entrance to the former Wantsum Channel at this time is not known with any certainty (Moody 2008, 35–52). Today the River Stour flows through the eastern part of the former Channel, continuing south-east until it reaches the Ebbsfleet Peninsula and the Stonar Bank. This 4 km long shingle bank extends from Cliffs End on Thanet, via Ebbsfleet, to Stonar near Sandwich and it forces the River Stour to turn south and follow the western side of the Bank. When the waters of the Stour reach Stonar they are prevented from flowing into the sea there by the Sandwich Bay spit which forces the river to double back on itself and to flow north, following the western side of the longshore spit. Having described this U-turn, the River Stour eventually joins the sea in Pegwell Bay, just to the south-east of Ebbsfleet.

Although Stonar Bank is the earlier feature, the detailed chronology of its development and also that of the Sandwich Spit are not well-known. The southern limit of the Wantsum Channel at the end of the Iron Age is indicated by the presence of a Late Iron Age and early Roman site at Archer's Low immediately north-east of Sandwich. This site, where Roman imports of Augustan–Tiberian date comprise a high proportion of the pottery assemblage, stands on the earliest of three successive sand dunes and it seems likely that it stood on the contemporary coast and was a port (Holman 2005a, 10–13; Clarke *et al* 2010, 10, 21–2, fig 1.5). Approximately 3.5km to the south-east at Dickson's Corner, on a gravel spit extending northwards from Deal, is a further Roman site, the nature of which is uncertain, though it appears to represent a settlement spanning the mid-1st to the early 3rd centuries (Parfitt 2000).

Although not well-documented, several Roman finds have also been reported from in and around the settlement of Stonar, which stands at the south end of the Stonar Bank (Moody 2008, 43). These finds confirm that the Bank extended this far south in the Roman period and suggest that at this time the southern mouth of the Wantsum Channel was somewhere between Stonar and Archer's Low, and was less than 1km wide. Recent excavations have also confirmed that Richborough, which is a little over 1km up channel from Archer's Low, stood on the western shore of the Wantsum Channel and the modern topography is similar to the Roman one, the site not having been denuded by coastal erosion as previously thought (Wilmott 2011).

The northern extent of the Stonar Bank at this time is not known but 16th-century maps show Stonar as an island (Clarke *et al* 2010, fig 9, 2; 15.1). It has been suggested that there was a northern entrance to the Wantsum Channel, north of Stonar and close to Ebbsfleet. In the 18th century it was recorded that Ebbsfleet was 'a little Creek or bay where the vessels used to harbour, and where was the usual landing place in this island [Thanet] from the Ocean' and it was regarded as providing access to Richborough (Lewis 1736, 9).

A second, tidal, northern entrance close to Ebbsfleet was shown by Dowker in the map he prepared to accompany his 1872 paper on Richborough. This was based on 'actual configuration of land above high-water at the present time' (1872, 14), and he was followed in this by Sonia Chadwick Hawkes in her essay on the physical topography of Richborough in the Roman period (1968, 228). While a northern entrance would

Pl 3.38 Late Iron Age ditch 314 and recuts (Weatherlees Pond; view from north-west)

have provided direct access to Richborough from the sea rather than sailing between Sandwich and Stonar, and would help explain the choice of the site as a Roman military base (Clarke *et al* 2010, 15–16), the existence of a second, northern, entrance to the Wantsum Channel cannot be regarded as proven (*cf* Parfitt 2004).

While there is some uncertainty about the extent and character of the Wantsum Channel in the Late Iron Age, and in particular the location and size and of a second, northern, mouth of the Channel, it is clear that the west side of the Ebbsfleet peninsula was accessible from the sea at this time.

With these caveats in mind, a provisional interpretation of the immediate local topography of the Ebbsfleet peninsula in the Late Iron Age is shown in Figure 3.63. This reconstruction suggests that the Ebbsfleet enclosure occupied part of the neck of the peninsula. In the south and south-east the defences broadly follow the modern 5m contour, enclosing the small hill, Ebbsfleet Hill, on which Ebbsfleet Farm stands. The identification of the enclosure ditch at Weatherlees Pond makes it almost certain that the ditch continued to the west of Ebbsfleet Farm and to the shore of the Wantsum (Pl 3.38), with the two islands in the Wantsum standing immediately to the west. This east-west alignment of the defences effectively cut off the peninsula to the south.

The lowest fills of the enclosure ditch in Zone 4 and at Weatherlees Pond are water lain and the Late Bronze Age evidence from Area 4 also suggests that the lower ground immediately to the south of the ditch may have been subject to periodic inundation in later prehistory. Sediment analysis of the primary and secondary fills of the eastern lengths of the defences in Ebbsfleet Lane confirmed that that they were also alluvial in origin. It is possible that some of these inundations were sea water.

While the southern length of ditch cut off the peninsula, it did not defend it. Instead the defences appear to enclose part of the eastern bank of the Wantsum Channel. The projected continuation of the defensive ditch requires a number of marked, possibly angular, changes in its alignment on its eastern side. The westwards route of the northern length of the ditch is not known. It has been projected here (Fig 3.63) as extending in a straight line towards the former eastern bank of the Wantsum. Only further work will define its course but it seems certain that a small embayment in the eastern bank of the Wantsum was in the area enclosed.

The defences

As a result of these three separate stages of work, ten sections have been excavated across the southern, eastern and northern lengths of the enclosure. In all the sections the ditch was seen to be of a similar size and shape and each section has been dated to the Late Iron Age through a combination of artefactual and radiocarbon dating (see Tables 3.2 and 3.5; Fig 3.64). It is supposed that there may have been a palisade or other defensive structure along the west side on the east bank of the Wantsum Channel.

The base of the ditch was generally flat and the sides typically have an angle of 45°. On average the ditches are 5–6m wide and just under 2m deep. In a single section, 127091 in Zone 4, there was a step in the base of the ditch in section. In all the excavated sections the ditch was cut by a smaller but still substantial V-shaped ditch up to 5m wide and between 1.5 and almost 3m deep. This V-shaped ditch is early Roman in date (see Chap 4).

No certain traces of a rampart were found nor were there any foundations for watch towers or gates. There is some inferential evidence for a mound, but not necessarily a rampart, from the current excavations. In Zone 6 many Bronze Age and Early–Middle Iron Age features were found in the north of the zone but there are no Late Iron Age or early Roman features in a band 20m wide to the south of the large defensive ditch (170082). This might suggest the presence of an earthwork of some sort. A few pits were found to the south of the ditch in Zone 6 but as similar features were not found in the other excavated areas it seems probable that these pits were associated with the Iron Age settlement.

In the 2005 excavations at Ebbsfleet Lane a large linear feature. 5m wide and 0.2m deep ran parallel and 15m to the west of the large ditch (ie, in the interior of the enclosure). This feature, 1890, was described as a probable palaeochannel but 'more like a spread for most of its width' (Egging Dinwiddy and Schuster 2009, 109). It is possible that this feature was associated with the defensive ditch but it seems unlikely to represent the base of a rampart. The overall distance from the west side of spread 1890 to the west side of the defensive ditch is 20m, the same width as the area in Zone 6 that is devoid of Late Iron Age and early Roman features.

The fills of most of the ditch sections indicate at least some material entering from what would have been the interior of the enclosure. In some cases there are relatively large deposits of what could be rampart material (Zone 4, context 127101 and in Zone 6, context 262123). However, in both Zone 4 and Weatherlees Pond material also entered from the outside and in Ebbsfleet Lane the fills appear to be possibly entirely alluvial in origin. The primary fills in all sections of the ditch are certainly or probably alluvial.

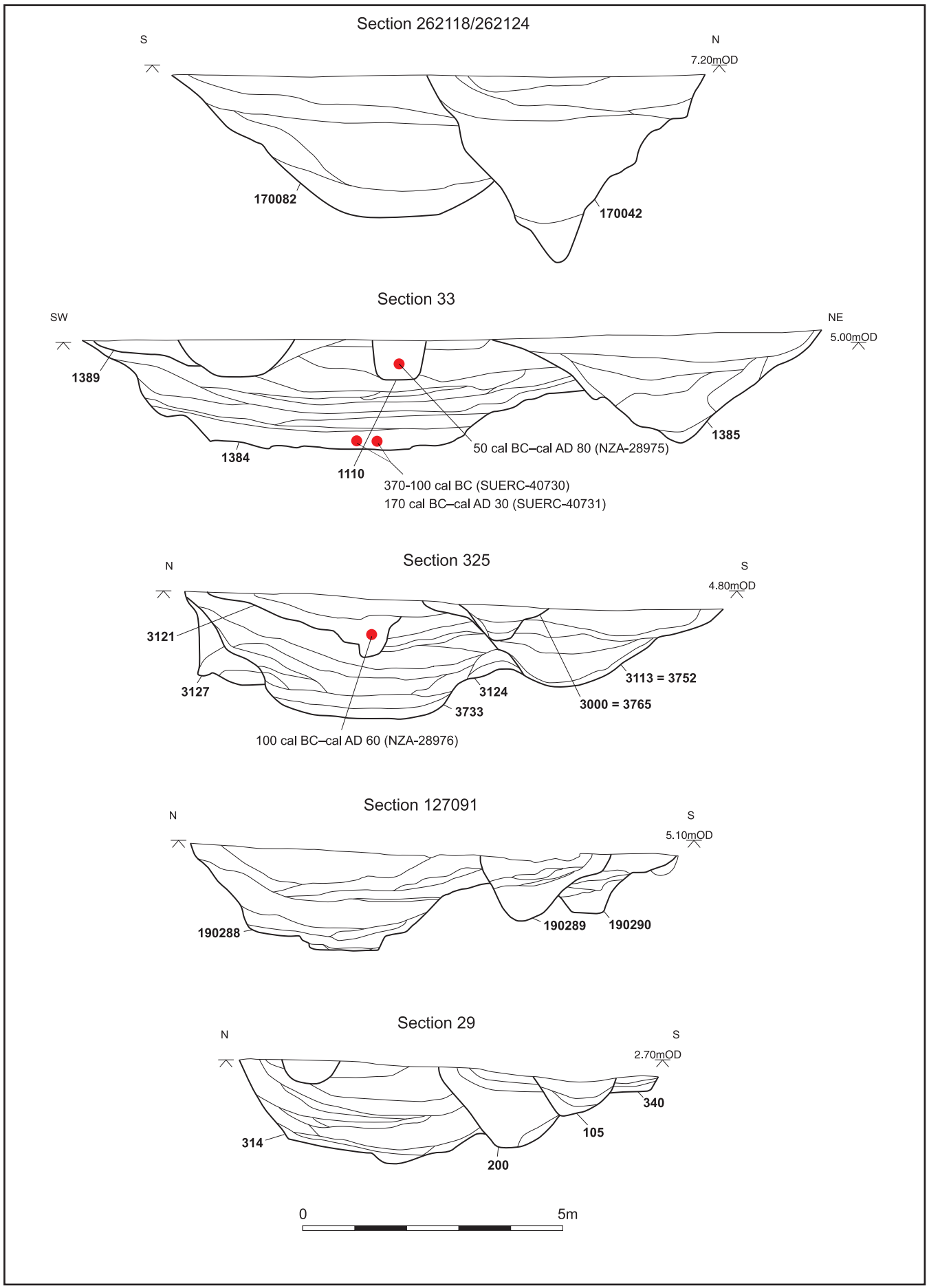


Fig 3.64 Excavated sections of early enclosure ditches recorded in Zones 4 and 6,Weatherlees Pond and in 2005 pipeline excavations

Pl 3.39 Late Iron Age gully 190302 – part of an arrangement of cippi*? (Zone 5; view from east)*

This might suggest that if there was an earthwork of some sort, it was either set some distance from the ditch, in front of it or behind it (or both), and/or that it's faces sloped quite gently. It seems likely that any earthwork was a simple dump structure without a revetment. The evidence for material entering the ditch from both sides might also suggest that at least some of the upcast was used to create a scarp and counterscarp to artificially increase the width and depth of the ditch.

One group of features in Zone 5 at Ebbsfleet Farm might also be associated with the defences. The north-western part of the zone had been heavily truncated when a barn was built but three or four parallel narrow gullies, 2m apart and up to 20m or more in length, were found in the east of the area (see below Fig 4.2; Pl 3.39). The gullies are contemporary with the large ditch and as they are 35m to the north of it, they would have been inside any rampart in this area.

It is also possible that some features in Zone 10, some 850m to the north, may be related. Ditch 194104 is dated to the Late Iron Age and was initially interpreted as a possible trackway flanked by two smaller ditches (194102–3; see Fig 4.40). However, as the ditch was 6.5m wide and 1.5m deep with a flat base, it may have been a defence. It seems likely that these are the same three features that were seen in the pipeline excavations at Cottington Road some 200m to the east. There the main ditch (6091) was 4.5m wide but only 0.2m deep, leading to its interpretation as a trackway (Egging Dinwiddy and Schuster 2009, 98, fig 2.14).

A second ditch dated to the Middle–Late Iron Age was found 50m to the north. Ditch 197031 is not as large as 194104 but is still substantial being some 4.5m wide and 1m deep. The sides slope quite gently and evenly to a flattish, slightly convex base 1–1.2m wide. The pottery from the ditch dates to the Middle–Late Iron Age.

The relationship of the enclosure to the Iron Age Settlement in Zone 6

An Iron Age settlement had stood in the northern part of Zone 6 long before the defensive enclosure was built. Partly because of its longevity, it was occupied for at least 400 years, the absolute and relative chronology of the settlement is difficult to establish, as is its chronological relationship to the defensive enclosure.

Pl 3.40 Overview of Iron Age–Romano-British settlement in Zone 6; note Late Iron Age ditch 170082 to left crossing north end of area (Zone 6; view from north-west)

Table 3.2 Summary of evidence from ditch sections of major 1st-century BC enclosure, in sequence from north to south

Location	*Date excavated*	*Context*	*Finds*	*Human bone*	*Figure*
Weatherlees Pond	2008	314	MIA–LIA pottery		3.64, Section 29
EKA Zone 4 (2 sections excavated)	2010	190288	MIA pottery in lower fills LIA pottery in upper fills	Femur in secondary fill (235) in second section (not illustrated)	3.64, Section 127091
Weatherlees WWTW	2005	3733	MIA –LIA pottery throughout sequence. Animal bone in primary fills.	Disarticulated bones in secondary fills	3.64, Section 325
Ebbsfleet Lane 1	2005	1384	MIA –LIA pottery throughout sequence. Animal bone in primary and secondary fills. Iron saw in secondary fill	Disarticulated bones, including skull fragments in primary fill	3.64, Section 33
Ebbsfleet Lane 2	2005	1208	-	Skull on base of ditch	Not illustrated
EKA Zone 6	2010	170082	MIA–LIA pottery from lower fills. Iron spearhead. Roman sherds from upper fill		3.64, Section 262118/262124

The settlement was clearly established by the 5th century BC but the bulk of the pottery assemblage that can be dated confidently, and also the largest number of closed groups, belong to the Middle Iron Age, broadly speaking the 4th–2nd centuries BC. In contrast, there are just five larger groups of pottery from the entire scheme that can be attributed to the 2nd–1st centuries BC.

Only one of the latter was from Zone 6. Seventy-four sherds were found in the upper fill of pit 292075 which contained an inhumation burial placed near to its base. Fortunately, what is perhaps the most reliably dated group of 2nd–1st century BC date from the scheme comes from the apparently separate Iron Age settlement in Zone 4. Ditch 190272, which is one of a group of droveway ditches associated with the settlement, contained 381 sherds of pottery (Vol 2, Fig 9.3) and one of the other ditches appeared to be cut by defensive ditch 190288 (Fig 3.22).

The northern circuit of the enclosure in Zone 6 (170082) also provides important stratigraphic evidence (Pl 3.40). For most of its life the settlement in Zone 6 was an open settlement in which the post-built roundhouses were arranged alongside a series of trackways. A change in this organisation of the settlement was marked by the appearance of small enclosures or compounds defined by ditches. The northernmost compound in this new arrangement was cut by defensive ditch 170082.

The shared eastern alignment of the settlement and the defensive enclosure would seem to be dictated by the proximity of the coast.

This, admittedly limited, stratigraphic evidence suggests that the settlements were occupied before the defensive enclosure was built and this is consistent with the 2nd–1st century date from the radiocarbon dating and the limited evidence for pottery of 2nd–1st century BC date. This would also suggest that much of the Middle–Late Iron Age pottery in the defensive ditches (Table 3.2) may be residual.

The date of the enclosure

As well as the Iron Age pottery, other finds provide dating evidence. An Iron Age type iron saw was found in 2005 in a stabilisation horizon in the secondary fills (1127) of ditch 1384 at Ebbsfleet Lane (Egging Dinwiddy and Schuster 2009, 110, fig 2.23, 025, 117), and in Zone 6 an Iron Age spearhead (ON 3292, see Vol 2, Scott, Chap 3; Scott below) was found in one of the upper fills (305026).

Roman pottery has only been found in the upper fills of the ditch. There is a little from Zone 6 and some 1st–2nd century sherds were found in the fill of a double grave cut into the top of the ditch in Zone 4. The lower of these two burials (147256) has been radiocarbon dated to the Late Iron Age. In 2005, at Weatherlees pipeline, five sherds dated to AD 50–60 came from the context that overlay grave 3121, but the burial was again radiocarbon dated to the Late Iron Age (100 cal BC–cal AD 60, NZA-28976; 2016±30 BP; Egging Dinwiddy and Schuster 2009, 108).

As Iron Age settlements preceded the building of the defensive enclosure in Zones 4 and 6 and probably also at Ebbsfleet Lane (see below), some of the pottery and associated finds in the defensive ditch may derive from those occupations rather than being contemporary with the use of the enclosure.

A small but targeted programme of radiocarbon dating was undertaken to try and refine the Middle–Late Iron Age chronology. Although no dates were originally obtained from the fills of the ditch excavated in 2005, it transpired that there was more material suitable for dating in these sections than in any one excavated subsequently. Accordingly the new dates

were made on materials from the 2005 excavations, complementing the existing dates from the burials cut into the top of the ditch.

Before the samples were submitted predictive modelling of the anticipated results was undertaken. This suggested that an attempt to date the complete stratigraphic sequence with the resources available would not provide results that would significantly refine the existing chronology. Consequently it was decided to concentrate on dating materials from the lowest fills of the ditch with the intention of trying to model the building of the ditch as a radiocarbon event. In addition, the two existing dates from the burials cut into the top of the defensive ditch were supplemented by a third one on burial 147256 in Zone 4.

The ditch section with the greatest potential for dating was in Ebbsfleet Lane (1384). After assessing the material for preservation, evidence of redeposition etc, part of the skull of a *c* 18–30 year old man and a sheep mandible from the primary fill of the ditch (1184) were dated. The frontal vault of a skull from a *c* 20–45 year old woman was found in primary fill (1088) of the section of the ditch immediately to the south (1208) and this was also radiocarbon dated, providing a third date for the primary fill of this length of ditch (see Barclay, below).

There was no suitable material for dating from the primary fill of the northern length of the ditch, nor from any of the three sections excavated across its southern length. The best sample available was animal bone from the second lowest fill (3146) of the southern length of ditch 3131 excavated in 2005. Although it is only a single date, the result is consistent with those from section 1384. Details of the Bayesian modelling, including estimates of the time that it took for the ditch to silt are given below. The analyses succeeded in refining the rather broad pottery dating and indicate that the ditch was excavated in the 2nd or 1st centuries BC and in the case of section 1384, probably in the 1st century BC.

Radiocarbon dating *by Alistair J Barclay*

An attempt was made to date the construction of ditches 1384 and 3131 to determine whether they were created during the 2nd or 1st century BC. In order to date these events an assessment of all possible sample material was undertaken and a simulation model based on the available samples and stratigraphy was constructed using the OxCal programme.

Three samples of disarticulated bone (two human skull fragments and a sheep mandible) from the primary ditch fill of 1384 were dated by SUERC-40729–31. As the bone was disarticulated the assumption was made that it was all residual but possibly not much older than the digging of the ditch. On this basis the youngest of the samples is likely to be closest in date to the construction of the ditch. This was modelled as *Last_Construct_ditch 1384* (Fig 3.65) and gives a date for construction of *160 cal BC to 1 cal AD (at 95% probability) or more likely 120–30 cal BC (at 68% probability)*. Burial 1110 was made in a grave that cut the uppermost ditch fill (Dinwiddy and Schuster 2009, 108, fig 2.20).

Given the size of the ditch, the time between its digging and the placing of the burial involves a lapse of time that is likely to equate to at least several years and possibly decades. Ditch silting has been estimated using the OxCal Date function (Fig 3.66) and this returns a date estimate of *120 BC to 50 AD (at 95% probability) or more likely 80 BC and 10 AD (at 68% probability)*. The difference between the date for the burial and the construction of the ditch has been modelled (Fig 3.66) (with the assumption that there was little or no hiatus between the final silting and the placing of the burial). The result suggests that ditch silting could have taken somewhere between *40 to 130 years (at 68% probability) or 10 to 180 years (at 95% probability)*.

Estimating a more precise date for the construction of ditch 3131 was restricted by a lack of sample material. Only a single sample of disarticulated animal bone was available from the primary fills, which in the model presented here was treated as a *terminus post quem* (Fig 3.66) modelled as *After_SUERC-40728*). The upper fills of the ditch cut were sealed by burial 3121 that had been previously dated by NZA-28976 (Barclay 2009, 170). As the two dates were in sequence a construction date for the ditch and earthwork was estimated using the OxCal *Date* function. This gave a likely estimate for construction at some point between *190 to 20 cal BC (at 68% probability or 350–20 cal BC at 95% probability)*. Whilst this result lacks the precision of the age estimate for ditch 1384, it is not incompatible. A date estimate was also calculated for the secondary recut ditch using the OxCal Date function. This gives a result for the cutting of the ditch as occurring at some point between

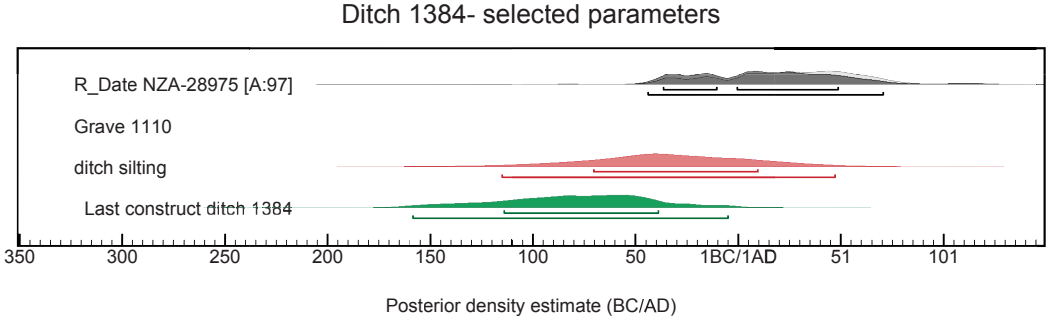


Fig 3.65 Selected probability distributions for ditch 1384 (see Figure 3.67)

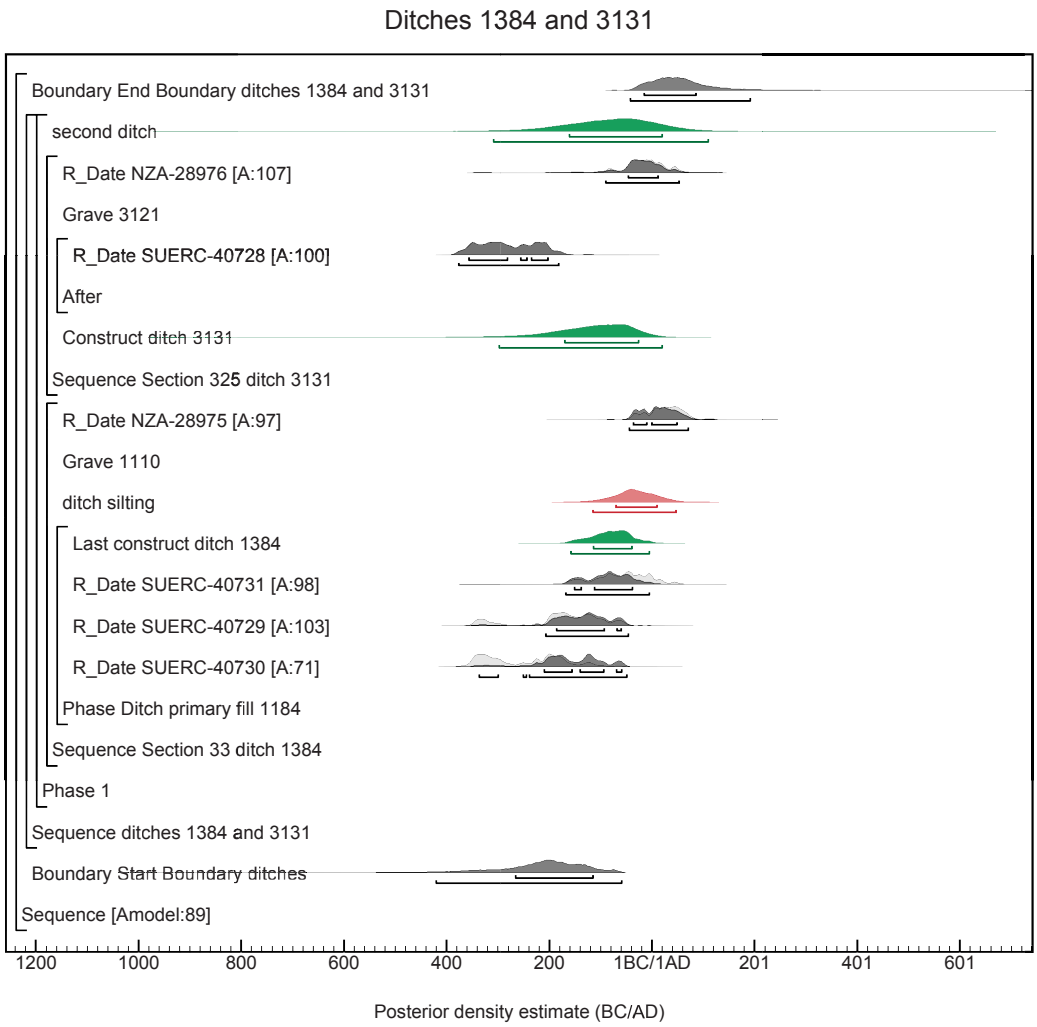


Fig 3.66 Probability distributions for the dates from Iron Age ditches 1384 and 3131. Each distribution represents the relative probability that an event occurred at a particular time. For each of the dates two distributions have been plotted, one in outline which is the result produced by the independent calibration of the radiocarbon measurement and a solid one which is based on the chronological information provided by the model. For example, the distribution 'Last construct ditch 1384' is the estimated date for the digging of the feature. The large square brackets down the left-hand side of the diagram, along with the OxCal keywords, define the overall model exactly

20 cal BC to 100 cal AD (68%) or 50 cal BC to 240 cal AD (at 95% probability).

The three burials made in the silted up primary ditch (1384 and 3131) all date to the pre-conquest period. Burial 3121 NZA-28976 is likely to have been placed at some point between *50 cal BC to 20 cal AD (at 68% probability) or 90 cal BC to 40 cal AD (at 95% probability)*. Burial 1110 NZA-28975 is likely to have been placed at some point during *40 to 10 cal BC (30.6%) and 10 cal BC to 40 cal AD (37.6%) (at 68% probability) or 50 cal BC to 70 cal AD (at 95% probability)*.

Grave 147256 from Zone 4 (SUERC-40286) is dated to 200–1 cal BC at 95.4% probability and also belongs to the 2nd or 1st century BC.

Coinage

Further dating evidence for the settlement comes from the Iron Age coins. A significant number of Iron Age coins were already known from the Ebbsfleet peninsula (Holman 2005a). When these earlier finds are compared with those found in 2010 it seems likely that most of them came from the settlement in Zone 6, giving a combined total of almost 100 coins. This represents a major site assemblage though the comments below concentrate on the 2010 finds. Many of the coins and other metal finds came from a colluvial deposit towards the south of Zone 6 which contained finds of Iron Age, mainly Late Iron Age, and Roman date (with some later material).

Some 44 Iron Age coins were found in Zone 6 with one each from the adjacent Zones 4 and 7. Although most of the coins from Zone 6 come from colluvium or the topsoil rather than well-stratified contexts, they form a tight chronological group that dates to the late 2nd and earlier 1st centuries BC (Vol 2, Fig 1.1).

Over 77% of the coins from Zone 6 are potins, a type that is particularly common in Kent. Potin coins are usually divided into three chronological varieties. The earliest of them is the Kentish Primary Series (sometimes called the 'Thurrock type') which is usually dated to the 2nd century BC (12 examples). The Kentish Primary Series was succeeded by Flat Linear I (Allen's

Class I (Allen 1971)) which is usually dated to the late 2nd century BC to the mid-1st century BC (22 examples). There are also two gold coins that are broadly contemporary with the potin coins (the Gallo-Belgic BA quarter stater and the plated Gallo-Belgic C stater). Flat Linear II coins (Allen's Class II) were originally dated to the second half of the 1st century BC (no examples) but it now seems likely that their production did not outlast the middle decades of the century (Gruel and Haselgrove 2007).

Uninscribed struck bronze coins began to be issued in Kent in the second half of the 1st century BC, from *c* 40 BC. From *c* 25 BC they were superseded by inscribed issues (four examples). The Gaulish Ambianic bronze (Scheers 125) could be contemporary with the earlier potins and Gallo-Belgic gold though a slightly later date cannot be excluded.

Curiously, there are single gold, silver, and bronze issues of Cunobelin, but as the stater is notably worn, it is possible that they all arrived after the Claudian conquest. The date at which the Sicilo-Punic issue arrived is not clear. A number of these coins were identified in Holman's earlier survey.

Kentish Primary Series and Class I coins are particularly common in East Kent and appear to have been issued there. These dominate the assemblage from Zone 6 and this is consistent with the profile identified from earlier metal detecting finds from the Ebbsfleet peninsula (Holman 2005a). However, a greater proportion of Class I potins were recovered from the excavation, perhaps due to better recovery of these often corroded and fragmentary issues, and as a result the ratio of Primary Series and Class I coins in the assemblage from Zone 6 has been reversed. The effect of this is to increase the proportion of coins dated to the first half of the 1st century BC.

Unlike the earlier types of potin, Class II coins were not issued in East Kent but further to the west. As a result these coins, while still common, are markedly less frequent in East Kent than the earlier types and they are all but absent in Thanet (Holman 2005a); this is also the case in Zone 6. Nonetheless, the broadly contemporary uninscribed bronze issues, whether continental or British issues (the continental coins being the earlier), are common finds in East Kent and Thanet. With the single exception of the Ambianic coin, these uninscribed issues are also absent from Zone 6.

The two coins of Dubnovellaunus from Zone 6 were issued in the later 1st century BC while the two of Eppillus and the three coins of Cunobelin date to the 1st century AD. A higher proportion of 1st century AD coins were identified in Holman's earlier survey and some continental bronze issues could be pre-Claudian imports, as could the small number of Sicilo-Punic issues (Holman 2005a, 16–18).

Even so, the overall Iron Age coin profile from Zone 6 remains an early one. It is clear that a significant number of coins dating to the later 2nd century BC and the earlier 1st century BC is present. In contrast, uninscribed struck bronze coins are all but absent and inscribed issues are rare. As Holman demonstrates in Volume 2, (Chap 1), when compared to other sites in East Kent in both absolute and relative terms this indicates a significant change in coin use at Zone 6 after the mid-1st century BC (Vol 2, Figs 1.1–2).

Brooches

Relatively few Iron Age brooches were found in Zone 6, restricting the chronological contribution that this category of evidence can make. In addition to a ring-headed pin of Early Iron Age date, two iron filiform brooches with external chords (one with two coils and the other with four) were found in the colluvial deposits (ON 2122 and 325; Vol 2, 60, nos 61-2). Although their catch plates are missing, it is probable that they are of Feugère types 1–2 which date to *c* 120–55 BC (ie, La Tène D1–2a; Fitzpatrick 1997, 203–4). No brooches such as boss-on-bow (Aylesford/Almgren 65) types that continued into the second half of the 1st century BC were identified.

In contrast, 19 Late Iron Age/early Roman brooches were found, including three Colchester type and three Colchester derivatives, five Nauheim derivatives, three or four Hod Hills and a possible Aucissa (ON 3361). These types all date to the first half or middle of the 1st century AD but are more often found in Roman contexts. Only the Colchester types and the possible Aucissa brooch from Zone 6 might date to the later 1st century BC.

Although there are too few La Tène D1–2a brooches to allow a meaningful comparison of their relative proportions, the brooches echo the chronological pattern of the coins. It is particularly noticeable that the very substantial increase in brooch deposition typically found on settlements occupied in the late 1st century BC and the early 1st century AD (Haselgrove 1997) is not seen at Zone 6.

Conclusion

The groups of pottery from Zones 4 and 6 could indicate that there a move towards a more dispersed settlement pattern may have been in progress, but it seems clear that there was a change of the size and the character of the settlement in Zone 6, and possibly also in Zone 4, around the time that the defensive enclosure was built.

From about the middle of the 1st century BC no new features were created in the northern part of the area previously occupied by the settlement in Zone 6. While the route of the longest established trackway was respected, a new one was established to the east of it. It was only in the Roman period that there is once again extensive evidence for settlement in Zone 6, though it is notable that this settlement follows the southern ditched boundary of the former Iron Age settlement. In Zone 4 there is no evidence for buildings after the mid-1st century BC either.

Although the evidence from each category is generally slight, the stratigraphic, ceramic and numismatic evidence

are consistent in suggesting that the settlement in Zone 6 was used less intensively in the 1st century BC than previously. The relatively abundant numismatic evidence suggests that this change occurred around the middle of the century.

The result of this analysis is that little, if any, settlement contemporary with the Ebbsfleet enclosure can currently be recognised within it. This suggests that the use of the enclosure was short-lived.

Comparable British sites

The Ebbsfleet enclosure, at over 20 ha, is very large and may be compared in size with a hillfort. It is generally considered that in southern England the building of hilltop fortifications had stopped by the 1st century BC and hillforts were superseded to some extent by low-lying sites that sometimes occupied valley-side positions.

Where these valley-side sites are defended, Cunliffe has characterised them as 'enclosed *oppida*', sites that represent the last stage of 'hillfort' development in south-eastern England (Cunliffe 1976, 145–53; 2005, 402–6). The closest general parallels for the Ebbsfleet enclosure are with these enclosed *oppida*, and with the broadly contemporary ringworks and related sites in East Anglia (Jackson and Potter 1996; Evans 2003), though all these sites have full defensive circuits. Only a few enclosed *oppida* are known and they form a rather heterogeneous group but at least two, perhaps three, of them have riverside locations; the promontory fort at Dyke Hills (Dorchester-on-Thames), the riverside fort at Abingdon, both in Oxfordshire, and the site at Woolwich, London.

At Dyke Hills large ramparts to the north cut off the land within a bend in the course of the River Thames. The Thames forms the western and southern boundaries and a tributary, the River Thame, the eastern one. Although no excavations have been undertaken within this 44 ha site, air photographs have revealed features that are commonly found in Iron Age settlements. Unusually the built defences take the form of two banks with a large ditch between them and it seems likely that this unusual arrangement functioned as a moat (Lambrick with Allen 2009, 361–2, fig 9.19–20).

At Abingdon for which the Rivers Thames and Ock provide the southern and part of the western boundaries. The northern defences are formed by three curving ditches which enclose an area of 33 ha. The main ditches are 10–12m wide and 2.6m deep and it possible that the River Stert, a tributary of the Thames that flows towards the east of the defences, was diverted into the ditches. A strip 10m wide inside the inner ditch is devoid of Late Iron Age features and this is interpreted as indicating the presence of a rampart. There is evidence of intensive Middle–Late Iron Age occupation within the interior. Radiocarbon dates from the lower fills suggest that the defences were built between *c* 200 cal BC and 55 cal AD (Lambrick with Allen 2009, 362, fig 9.19–20).

Little is known of the fort on the south shore of the River Thames at Woolwich in south-east London. It has two ditches; the inner 10m wide and 4m deep, the outer 5m by 3m, both with flat bases. Unusually, the ditches are only 1m apart. The plan of the site and the area enclosed are not known but it could have been 5–7 ha in extent. A settlement within the area enclosed was occupied in the Middle Iron Age until the first half of the 1st century BC (Philp 2010). The report on subsequent excavations is in progress.

The large low-lying enclosure at Wheathampstead, Hertfordshire also uses a river, the Lea, as a boundary, though there is some debate as to whether the earthworks are natural or artificial in origin and whether there was a complete defensive circuit. There is, however, certainly Late Iron Age occupation in the area partly enclosed by the dykes (Wheeler and Wheeler 1976; Dyer 1976; Saunders and Havercroft 1982).

In Kent, two lengths of rampart still survive at Quarry Wood Camp, Loose, near Maidstone. They are part of an irregular defensive circuit that enclosed 30 ha. The site is notable in occupying largely level and low-lying ground. Limited excavation has been undertaken, showing that there was 1st century BC occupation (Kelly 1971; Thompson 1982, 733–5).

The coastal site of Hengistbury Head, Dorset has extensive Late Iron Age activity with abundant evidence for trade and exchange with the Continent, but it is suspected that the defensive dykes that cut off the promontory are earlier and date to the Early Iron Age (Cunliffe 1987; Cunliffe and de Jersey 1997; Fitzpatrick 2001). The nature of the activity that yielded the series of Late Iron Age finds that have eroded from Selsey Bill, West Sussex is not known (Aldsworth 1988; Fitzpatrick 1997, 8–9).

Lastly, although Cunliffe calls Bigbury and Oldbury hillforts in Kent 'enclosed *oppida*', this is largely on chronological grounds. They occupy high ground and are normally, and correctly, regarded as hillforts (eg, Thompson 1983; 1986).

The scale of excavation at these valley sites has varied. Extensive work has been undertaken at Abingdon and Hengistbury Head but there has been comparatively little at Woolwich Quarry Wood Camp and Wheathampstead, and none at Dyke Hills, Dorchester-on-Thames. The three riverside forts offer the best parallels for the setting of the Ebbsfleet enclosure. It seems likely that the ring-forts in East Anglia also used water and marshes as part of their defences. At Stonea Camp the site is so low lying that it is very likely the ditches must have been flooded for much of the year.

However, two traits distinguish the Ebbsfleet enclosure from these sites. One is the apparent absence of a rampart (which is present in some form at both Oxfordshire sites, where the ditches may have been used as moats, and in all the ring-forts, which are often multivallate), and an apparent absence of contemporary settlement inside the enclosure. The Iron Age settlement in Zone 6 seems to have gone out of use in the middle of the 1st century BC, and the three radiocarbon dated burials cut into the top of the defensive ditches show that that the defences were

infilled by the middle of the 1st century AD and perhaps early in that century. Apart from the large number of coins, there is no evidence that the site was engaged in trade and exchange in any significant way.

Although it is much smaller than the enclosed *oppida*, perhaps as little as 7 ha, the nearby site at Worth deserves particular mention for its similarities with the Ebbsfleet enclosure. This site, which is best known for its Romano-Celtic temple, lies 2.8 km south of Sandwich (Holman 2005a, 8–10; 2005b, 265–75). It is sited on a low, but prominent, chalk ridge which in the Late Iron Age may effectively been a promontory projecting into the low lying ground that is now occupied by the marshes of the Lydden Valley (Clarke *et al* 2010, fig 1.5). Although smaller than the enclosed *oppida* it is much larger than typical Iron Age settlements which rarely exceed 2 ha.

The discovery of three miniature bronze shields at Worth (RA Smith in Klein 1928, 79–81, fig 11; Stead 1991b, 25, 31) meant that an Iron Age predecessor to the Romano-Celtic temple has long been suspected and recent work has shown that the temple lies within a Late Iron Age enclosure.

The full circuit of the enclosure at Worth, which was identified from an air photograph, is not known, but it is estimated to be oval or sub-rectangular in shape and at least 6.5 ha in size, with the longer side of the enclosure aligned east–west and straddling part of the north–south ridge. The north-eastern circuit of the enclosure, which is adjacent to the wetlands, has not been identified and it is possible that the ditched circuit was not complete and instead was open to the marsh. A single entrance is currently known at the south-east. As this also opens onto wetlands it is likely that there was (at least) another entrance in the northern side of the enclosure.

Trial excavations have shown 'that the ditch generally has sloping sides with a broad flat base. Its dimensions are somewhat variable; measurements across the top of the ditch range between 2.25m and 5.50m whilst depths between 0.6m and 1.80m are recorded' (Holman 2005b, 267).

Several Middle Iron Age pits containing pottery and two La Tène I brooches found in metal detecting indicate that a settlement stood on the site in the 5th–4th centuries BC. Late Iron Age pottery is also present in large quantities and imported fine wares indicate activity around the time of the Claudian conquest. A large number of Iron Age coins (200+) have also been found, largely through metal-detecting. Most are Kentish potins of Primary and Flat Linear I types dating to the late 2nd century and earlier 1st century BC. Some Dressel 1 amphorae may be contemporary with this activity. The coin profile suggests that there was a sharp reduction of activity in the second half of the 1st century BC before it increased in the 1st century AD.

The coin profile is comparable with that for the Ebbsfleet enclosure and also the site at Eastry, some 8km south-west of Worth, though there is more coin use at Worth in the 1st century AD than at either Ebbsfleet or Eastry (Holman 2005a, 20–1; 2005b, 280–1). Like Worth, Eastry also lies close to the edge of the marshes, standing above the Northbourne before it flows into the Lydden Valley.

At Worth the enclosure ditch is tentatively dated to the Late Iron Age on the basis of the pottery found in it. While it is possible that the ditch defined a religious space, a *temenos*, enclosing a predecessor to the Romano-Celtic temple, Holman is cautious about interpreting the coins as votive deposits (2005a; 2005b). He observes that the various aspects of the composition of the assemblage and its treatment do not compare readily with known temple sites from southern England (Haselgrove 2005).

The function of the Late Iron Age Worth enclosure is, therefore, uncertain but its size, the shape of the ditch, and the possibility that the enclosure did not describe a complete circuit may all be compared with the Ebbsfleet enclosure. As at Ebbsfleet, the enclosure was built on the site of an earlier Iron Age settlement.

Julius Caesar in Britain

The identification at Ebbsfleet of a large but short lived defensive enclosure of 1st century BC date on the east coast of Kent means that an association with Julius Caesar's invasions of Britain should be considered, as should the possibility that the enclosure is a Roman rather than British work.

Julius Caesar made two incursions to Britain, in 55 and 54 BC, but these have attracted little serious study in recent years. In the later 20th century earlier over-enthusiastic attempts to identify Caesar's camps by early antiquarians gave way to a well-founded scepticism. This position has become entrenched and recent studies typically regard Caesar's invasions of south-east England as having been of little importance. In his study of the hillfort at Bigbury near Canterbury, a site which is widely accepted as having been attacked by Roman forces in 54 BC, Thompson adopted an almost apologetic tone in describing his approach as 'very traditional' (1983, 258).

However, there is extensive numismatic evidence that can be plausibly associated with Britain's involvement with the Battle for Gaul. The later varieties of the Gallo-Belgic C and E types, and probably type D also, may well be the gold coins used to pay the service of British mercenaries fighting in Gaul against Julius Caesar's armies (Scheers 1972; Haselgrove 1984; Sills 2003; Roymans *et al* 2012).

It is also important to recognise that while Caesar's invasions of Britain were relatively short campaigns, they still involved large numbers of troops. The first invasion in the summer of 55 BC may have lasted for as little as five weeks and been confined largely to Kent and the surrounding area, but it involved at least 10,000 soldiers. The invasion force in the summer of 54 BC was much larger. It may have involved over 30,000 soldiers and it lasted for at least 12 weeks. Having marched overnight after disembarking, the 7th Legion stormed a hillfort 20km to the west. The campaign continued

westwards before crossing the Thames and into modern Hertfordshire, and perhaps Essex, before returning to Kent and then France. Such major naval operations and land campaigns should be anticipated to have left archaeological traces and at least some finds, old and new, may be plausibly associated with them.

The location and setting of Bigbury, which until recently was virtually the only known hillfort in East Kent, are consistent with it being the fort described by Julius Caesar. Accordingly, the recent identification of a major, but undated, 35 ha enclosure at Homestall Woods, Harbledown on the other side of the valley from Bigbury (Sparey Green 2010; 2013) is of considerable interest. 'Paired hillforts' are not uncommon, for example in Wessex (Bowden and McOmish 1987; Toase 2008), but it is striking that two forts should be found in such close proximity in East Kent. The Roman Mannheim-type bronze helmet recently discovered 'near Canterbury' dates to the mid-1st century BC and may also have been associated with the Gallic Wars (Richardson 2012). The distribution of finds of this type of infantry helmet in France has been suggested to have a strong correlation with the location of Caesar's campaigns.

Although a few sites and finds in Kent could be associated with Caesar's campaigns, there is no consensus as to where the invasion forces landed in either 55 or 54 BC. The most recent informed commentary remains that by Christopher Hawkes (1977). Based on Caesar's first-hand account of the invasion, Hawkes suggested that in 55 BC the Roman army first attempted to land at Dover but, after they were repelled by British forces, they landed further to the north at or near Deal. He suggests that the much larger force of 54 BC landed close to Worth, on a beach now lost, having been 'long buried by the choking up of the bay' (1977, 157).

In this situation it is worth returning to Caesar own words. He states that in 55 BC the army disembarked on a 'flat and open beach' and in 54 BC at 'the part of the island that last summer's experience had shown us to have the best landing places.' The fleet of 54 BC comprised 800 or more ships 'anchored on an open shore of soft sand' (*BG* V, 8).

Roman military bases and defences

In considering the Ebbsfleet enclosure it is important to recognise that the armies of the Roman Republic were very different from Imperial ones and so were their bases. By no means all Republican bases display what was to become the typical playing-card shape known from the frontiers of the Empire.

Many late Republican bases in Iberia (Luik 1998; Dobson 2008) and in France (Reddé 2006) are quite irregular in shape, often being summer campaign bases rather than winter quarters. Their layout closely follows the local topography rather than an ideal type of military disposition and such varied layouts continued through the early Principate into the Claudian period when they all but disappeared. This is not to say that regularly planned, rectangular, bases are unknown. The one at Cacères el Viejo, Cacères, Spain, which dates to the Sertorian wars of the 80s BC, is one of the earliest examples (Ulbert 1984; Luik 1998) and the site at Mauchamp, Aisne, probably to be dated to 57 BC, is also rectangular.

The pre-eminence given to topography during campaigning in this period is well illustrated by the bases at Alésia, Côte d'Or, which were built for the siege of the *oppidum* on Mont Auxois in 52 BC. These sites are perhaps the best studied of the Roman bases built during Caesar's Gallic War of 58–52 BC (Reddé and von Schnurbein 2001). Survey and excavation have shown that the curvilinear circuits of the camps are irregular and that some of the defensive ditches and outer works are slight, often just 2–3m wide and less than 1m deep. None of the ditches have the V-shaped profile and 'ankle breaker' slot that is commonly (and incorrectly) assumed to be typical of Roman defences of Imperial date. A similar variability is seen in the defensive ditches at Gergovie, Puy-de-Dôme (Deberge and Guichard 2000, 103), though these are typically smaller than those at Alésia, rarely being more than 2m wide and 1m deep, though most are V-shaped with the occasional flat-bottomed section. The defences of the Ebbsfleet enclosure have some important similarities with the Roman defences at Alésia and it is necessary to understand the context and function of the Roman examples.

The scale of the Roman defences at Alésia is vast. They include the 15km-long siege works that encircled the *oppidum* (a circumvallation in English; but the French usage at Alésia is the 'contrevallation'), and the 21km-long rear defences that were added behind the siege works to defend the Roman lines from attack by the Gaulish relieving army (a contravallation in English; but the French usage is 'circonvallation' and that usage is followed here for the sake of simplicity – if not clarity). In addition there are at least three, perhaps six bases or camps, and a much larger number of small fortlets, possibly over 20. The whole arrangement at Alésia and the order in which the siege works were built is very similar to that used by Scipio in his siege of Numantia in 133 BC.

At Alésia the defences of the contrevallation comprised between one and three ditches and a rampart. The contravallation has been best studied in La Plaine des Laumes at Epineuse to the west of the *oppidum*.

Julius Caesar describes how the first stage in the building of the siege works was the excavation of a trench 20 Roman feet wide (6m) with perpendicular sides. Its purpose was to offer protection while the siege works were being built.

When this ditch had been excavated he moved all the other siege works (ie, the contrevallation) back 400 feet from it (120m). There has been relatively little excavation of this first ditch at La Plaine des Laumes, which is commonly known as 'le fossé de 20 pieds', but it is clear that it had a flat base with gently sloping sides. The ditch is between 4.6–5.4m wide (and so 16–18 Roman feet wide rather than 20), but it is much further away from the siege works than Caesar stated, the distance varying

between 300 and 900m. No trace of a rampart or counterscarp bank was noted in the most recent excavations (in 1996) of the ditch.

The contravallation in La Plaine des Laumes has three ditches and the outermost one, the one closest to the *oppidum*, is called ditch 1. Ditch 2 ran parallel to it and was separated from it by a narrow berm between 1–3m wide. Ditch 3 was 15m behind ditch 2 and the turf-faced rampart stood immediately behind it. This 15m wide area (the glacis) was filled with rows of traps. These comprised long trenches containing sharpened tree trunks or branches only the top of which projected above ground (*cippi*), rows of pits that concealed large, sharpened, stakes (*lilia*) and iron hooks fixed to blocks of wood that were secured by burying them in pits (*stimuli*). This archaeological evidence corresponds closely with Julius Caesar's account of the building of the defences (*BG* VII, 72).There were no ramparts behind ditches 1 and 2 and it is thought that most of the upcast from them was used, along with that from ditch 3, to build the rampart. It is possible that some of the upcast from ditches 1 and 2 may have been used to create small scarp and counterscarps on the edge of the ditches.

Although there is considerable variety in the shape of the individual ditches, due in part to the varying drift geology, the ditches of the contravallation clearly have quite different profiles. The ditch closest to the rampart, ditch 3, has a V-shaped profile, but ditches 1 and 2 are wider, deeper, and have flat bases. Although the profiles of the ditches are not invariably these shapes – in some places ditches 1 and 2 have more V-shaped profiles and in places ditch 3 has a flat base – in general the outer two ditches have flat bases. Ditch 1 is typically 4m wide but in places it is as large as 6m. Ditch 2 is always smaller, between 3 and 5m wide. The bases of the single ditch of the fortlet at Epineuse, which was built in between the contrevallation and circonvallation defences, are also flat.

The defences of the circonvallation run parallel to the contrevallation, 125m to the rear. These circonvallation defences take the form of a rampart and ditch (ditch 2), an outer ditch (ditch 1) 8–9m away, with traps beyond which were mainly *lilia* or *stimuli* but with some *cippi* also. The ditch closest to the rampart (ditch 2) is again V-shaped while the outer one has gently sloping sides. The sizes of the two ditches are more similar than in the contravallation, though ditch 1 is again slightly larger, being 4m wide and 1.5m deep in comparison to ditch 2 which is 3.2–3.5m wide and 1.5m deep.

There were fewer ditches elsewhere in the defensive circuit and this seems to be directly related to the natural defensibility of the terrain. The wide plain of La Plaine des Laumes has few natural defences and so it may have been anticipated that this was the place where the large relieving force was most likely to mount an attack. In La Plaine de Grésigny to the north of the *oppidum* the contrevallation only had two ditches and these were of approximately equal size, but again the outer ditch (1) had gently sloping sides and a flat base while the profile of the inner ditch (2) was more V-shaped. At this point the contravallation had only a single ditch which was augmented externally by two narrow linear defences that recall *cippi*. This single ditch was V-shaped and up to 4.5m wide and 2m deep, which is larger than most other V-shaped ditches. In the valleys of the Oze and the Ozerain to the east of the *oppidum* the contrevallation and the circonvallation both had only single ditches, whose profiles may originally have been V-shaped.

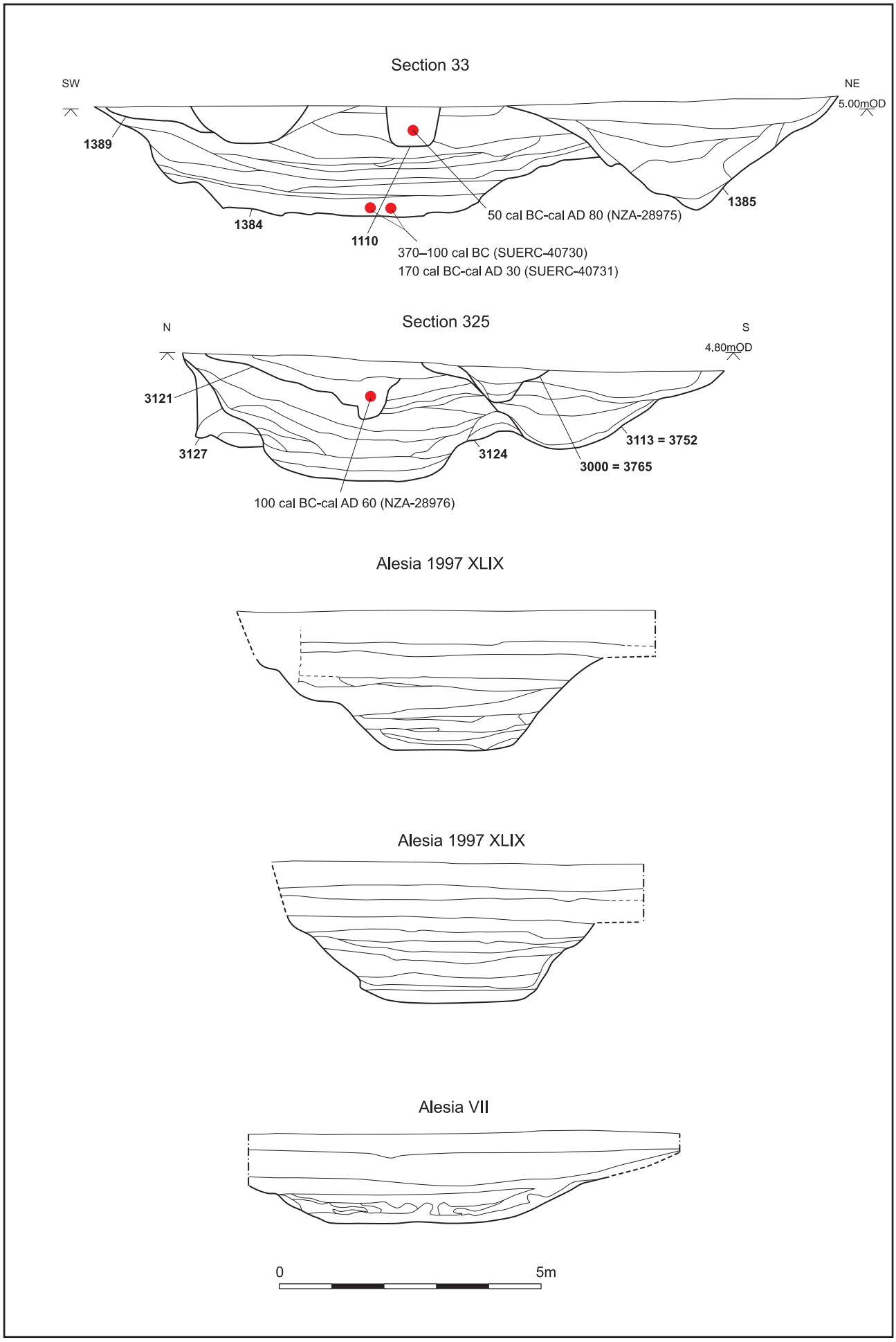
It is clear from this evidence that where there were multiple ditches in the siege works at Alésia the outermost ditches always had vertical or gently sloping sides and flat bases, with the ditch closest to the rampart being V-shaped and smaller. The deliberate use of ditches with different profiles is also seen slightly earlier at Cacères el Viejo, where the two ditches are next to the rampart of the campaign base (Ulbert 1984, 19, Abb. 2–3), and probably also at Alpiarça, Portugal (Kalb and Höck 1987, 697, Abb 2). At Alésia there is almost always evidence for rampart material in the fills of the V-shaped ditch 2, and rampart material is also present in the single, flat bottomed, ditch of the fortlet at Epineuse.

The wide, flat-bottomed, profiles of the Ebbsfleet enclosure may be compared with those of the '*fosse a 20 pieds*', ditches 1 and 2 of the contrevallation in the Plaine des Laumes at Epineuse and in La Plaine de Grésigny, and in ditch 1 of the circonvallation in La Plaine des Laumes. While there is some variability in the shape of the sections of the contrevallation ditches, the examples illustrated here (Fig 3.67) are typical of those recorded in the Franco-German excavations at Epineuse.

There are few sites that may be compared with Alésia, not least because the excavator of many of the bases in Spain, Schulten, believed that there were none, which, as has been noted elsewhere (Reddé and von Schnurbein 2001, 542), seems unlikely. However, similar flat-bottomed profiles were also recorded in the (undated) defensive ditches on the hillside at Armecy, Saône-et-Loire, excavated by Colonel Stoffel in 1886 and associated by him with the defences built near Bibracte to protect the Roman baggage train in the battle with the Helvetii in 58 BC. Stoffel published three profiles of the ditches; two single ditches and one double ditch. One of the single ditches was 5.5m wide with a flat base, while the outer one of the double ditch, while smaller, also had a flat base recalling the arrangement at Alésia (Stoffel 1887, 439, pl 23; *BG* I, 24). Although the identification of the ditches as those to protect the baggage train was challenged by Dunlap (1931, 124–6), there is a good agreement between Caesar's account and what was found, and the size and shape of the ditches is similar to those at Alésia which Stoffel had excavated previously.

Returning to Alésia, none of the outer ditches had ramparts or towers associated with them, but substantial postholes for towers were found at regularly spaced intervals along the line of the ramparts that faced the innermost ditches.

The absence of similar postholes at Ebbsfleet suggests that no towers were associated with the defensive ditch and, as discussed above, there is limited evidence for a rampart. However, the excavation of the enclosure ditch must have generated a significant quantity of upcast. In Zone 6 the 20m wide area behind the ditch which is


Section 33
SW
NE
5.00mOD
1389
1384
1110
1385
50 cal BC-cal AD 80 (NZA-28975)
370–100 cal BC (SUERC-40730)
170 cal BC-cal AD 30 (SUERC-40731)
Section 325
N
S
4.80mOD
3121
3127
3124
3113 = 3752
3000 = 3765
100 cal BC-cal AD 60 (NZA-28976)
Alesia 1997 XLIX
Alesia 1997 XLIX
Alesia VII
0
5m

devoid of contemporary and later features may indicate the location of bank made using the earth, but not a retained rampart. In Ebbsfleet Lane, feature 1890 might also have been associated with a bank, possibly being a small quarry used for material to heighten a bank. Such quarries were found in the lee of the rampart in some of the camps at Alésia.

Ramparts and ditches were not the only defences deployed at Alésia. The fills of ditch 1 of the contrevallation in La Plaine des Laumes are alluvial in origin and this, in combination with the progressive lowering of the level of the bottom of the ditch over several hundred metres, has been associated with Caesar's nonchalant comment that the inner ditch of the contravallation 'ran across the plain and the low ground, so I filled it with water diverted from the river' (*BG* VII, 72). The outer ditch was effectively a moat, and lengths of the Ebbsfleet ditch were also filled with alluvially deposited material.

While the Ebbsfleet ditches are very similar in size and shape to one of the types seen at Alésia, it is as well to remember Poux's sanguine remark about the potential similarity of the defences erected by opposing sides: 'au-delà de quelques différences de détail, rien ne ressemble plus à un fossé romain qu'un fossé… gaulois' (Poux 2008b, 306). There are, however, other suggestions of Roman-style defences at Ebbsfleet.

In Zone 5, an area which had been heavily truncated when a modern barn was built, three or four shallow parallel gullies 2m apart were found in the east of the area, *c* 35m to the north of the defensive ditch (Fig 4.2; Pl 3.39). The gullies date to the Middle–Late Iron Age. It is not clear what the purpose of these gullies would have been in an Iron Age context and although no postholes were noted in their bases, they were U-shaped, some with steep sides and they strongly recall the *cippi* seen at Alésia.

There, *cippi* were found in the circonvallation defences at both Camps B (La Montage de Flavigny) and C (La Montagne du Bussy), where there were three or four parallel rows of narrow, shallow, gullies, each 1.2–1.3 or 1.5m apart. Similar gullies formed part of the contrevallation in the valley of the River Oze and they were probably also part of the circonvallation in La Plaine des Laumes. The rows of gullies are invariably parallel to the line of the defensive ditches. In some cases there were postholes in the base of the gullies and these presumably contained the sharpened branches. It is possible that the pairs of parallel ditches found either side of the north gate of Camp C and outside the circonvallation ditch at La Plaine de Grésigny were also a form of *cippi*.

At Ebbsfleet the possible *cippi* in Zone 5 lie within the circuit of the defensive ditch but at the foot of Ebbsfleet Hill. If they are indeed *cippi* it would seem likely that they were defences for a defended enclosure of some sort sited on top of the low hill.

If this is correct it would suggest that three parallel, shallow gullies found in 2005 outside and immediately to the south-east of the defensive ditch in Zone 4 might be related. These gullies, which could only be dated to the later prehistoric period, are on an east–west alignment like those in Zone 5 and are 2m apart (Egging Dinwiddy and Shuster 2009, fig 2.19). Three of the gullies are slightly wider than those in Zone 5 but one is very similar. It seems likely that the northernmost of these gullies continued into Zone 4 as ditch 190257 where it was dated to the Iron Age.

Two ditches (190272–3) in Zone 4 that run parallel to the defensive ditch but to its south are interpreted as defining a trackway or droveway associated with an Iron Age settlement rather than being part of the defensive system. However, it is possible that the two groups of four postholes (193170 and 252185) that stand in between these ditches and which are interpreted as four-post structures associated with the settlement could be defensive traps such as *stimuli* rather than the foundations for buildings. This might also apply to the group of postholes immediately to the south between curvilinear gullies 190280–1.

Lastly, the ditches in Zone 10 (194104 and 197031) should be remembered. The pottery from their lower fills dates to the Middle–Late Iron Age. Both are substantial features, some 6.5m wide and 1.5m deep and 4.5m wide and 1m deep respectively. Both had flat bases. Ditch 194104 is the more southerly of the two and it is flanked by two smaller ditches that may be contemporary. It seems likely that these three ditches were recorded previously 200m to the east in Cottington Road, though there the large ditch was only 0.2m deep.

Although these ditches are 850m to the north of the Ebbsfleet enclosure it is still possible that these were outer defences. At Alésia 'le fossé de 20 pieds', which was the first ditch to be excavated in order to provide defence for the soldiers while they worked on the siege works, is up to 900m from those defences.

The weaponry from the Ebbsfleet enclosure

Although a number of weapons or fragments of them were found in Zone 6, their attribution and dating is difficult (Scott below; Vol 2, Scott, Chap 3). Many of the objects came from the colluvial deposit in the south or the topsoil and if the Ebbsfleet enclosure is indeed a Roman military work then it must be regarded as probable that the systematic early Roman recut of it is also a military work. Some objects are certainly Roman and military in nature and Claudian in date. They include a tinned and niello-decorated belt plate fitting, and a buckle. Two or three bronze scabbard fittings and bindings are also probably of this date. Their presence emphasises that fragmentary weapons, even if they are Roman rather than British, cannot easily be ascribed to a period unless they are typologically diagnostic.

The weaponry identified from the Ebbsfleet peninsula (Vol 2, Scott, Chap 3) includes:

Fig 3.67 (opposite) Excavated sections of early enclosure ditches recorded in 2005 pipeline excavations, shown in comparison to ditch sections from Alesia (France)

- A Late Iron Age sword found in the 2005 excavations adjacent to Zone 4 in an alluvial context to the south of the defences;
- Four Iron Age spearheads (ON 2982, 2957, 3200 and 3292);
- A dagger (ON 2988) and a fragment of another possible example (ON 3871);
- A possible sword blade (ON 3911) from an Iron Age context which could be of either Iron Age or Roman type.

Roman weapons include:

- A bent projectile head (ON 698) which, although it was found in collivium, does not have a well-defined pyramidic head typical of examples of Imperial date, and might be a Republican *pilum*;
- The socket of a *pilum* or other socketed projectile (ON 4094) of similar date;
- A possible tanged arrowhead (ON 699).

The presence of weapons on defended Iron Age sites in Britain is far from unusual. To take two recent excavations as examples; eight or nine spearheads and fragments from one or two swords and scabbards were found in the relatively small 1980s excavations in Maiden Castle hillfort, Dorset (excluding the finds from Wheeler's excavations; Sharples 1991, 164). The very much larger excavations at Danebury hillfort, Hampshire, yielded 10 spears and one or two swords (Cunliffe 1984, 361–6; Cunliffe and Poole 2001, 352). The largest groups of weapons from Iron Age sites other than hillforts are from votive contexts rather than settlements. These include the 1st century BC temple at Hayling Island, Hampshire (16–17 spears, shield binding and sword belt rings: King and Soffe 2001, 116) and the earlier watery deposit at Llyn Cerrig Bach, Anglesey (Fox 1947; MacDonald 2007).

In contrast, weaponry is very rarely found on typical Middle and Late Iron Age farming settlements. For example, there is a single fragment of a sword from Little Waltham (Drury 1978; Stead 2006, 183–4, no. 166) and none from the Stansted Airport Catering Site (Havis and Brooks 2004), both in Essex. Nor are there any from the Farningham Hill (Philp 1984) and Highstead (Bennett *et al* 2007) settlements in Kent. Occasionally though, small hoards of weapons are found within settlements as at Lofts Farm (Brown 1985) and Orsett Cock, both in Essex (Carter 1998, 83, 168, fig 53–4).

In this context, and especially as a long-lived Iron Age settlement had stood in Zone 6 for several centuries, the number of weapons from Zone 6 is not unusual. In view of the possibility that the defences are Roman careful attention needs to be paid to these weapons.

While the typology and chronology of British Iron Age spears remains weakly developed, most examples have leaf-shaped blades, are quite short, rarely being more than 100–150mm long, and do not have pronounced midribs (Stead 1991a, 74–5; Sealey 2007, 8). In comparison with them, the four spearheads from Ebbsfleet are relatively large (ON 2957: 210mm; ON 2982: 280mm ((blade only)); ON 3200: 191mm; ON 3292: 315mm) and all have pronounced midribs.

It is possible that the length of the Ebbsfleet weapons is due to their date. Only one of the spearheads was found in a well-stratified context, the others were found in colluvium. Spearhead ON 2957 came from the upper fill of defensive ditch 170010 in the north of Zone 6, probably dating the deposition of the weapon to the 1st century BC. The burial with weapons at Owslebury, Hampshire, dates to the mid-1st century BC and the spearhead there is 315mm long and also has a midrib, and a ferrule. The sword, scabbard, and shield at Owslebury all find parallels at Alésia and the winged belthook is a continental type (Collis 1973; Sievers 2001, 143–5, fig 6).

One or two of the Ebbsfleet spears have indented or 'wavy' outlines (ON 2957 and perhaps 3200). This trait is not typical of British spears, and only one other example is known to the writer, from Bredon Hill, Worcestershire (Hencken 1938, 75–6, fig 7, pl vii, i), but it is well-known in continental Europe and is well-represented amongst the spears and javelins found at Alésia where these weapons typically have pronounced midribs (Sievers 2001, 156–7, pl 55–8).

This suggests that the inspiration for some of the Ebbsfleet spearheads may be Continental and that they could be contemporary with the use of the enclosure rather than being associated with the preceding Iron Age settlements. However, the cultural association of these spearheads is not straightforward.

As noted above, there was considerable cross-Channel contact during the Gallic War and British soldiers are known to have fought with the Gauls in France against the Romans. It has been argued that the grave of at least one such Briton can be identified through the weapons that were buried with him at Kelvedon, Essex (Sealey 2007). The situation is further complicated by the extensive use made by Julius Caesar of Gaulish and also German auxiliaries throughout the Gallic War, which makes it difficult to attribute weaponry to particular groups (Pernet 2010, 184–8). During the war many Gaulish tribes were also allied with rather than opposed to him and it seems very probable that Gaulish riders were amongst the Roman cavalry forces in 54 BC (the cavalry having been unable to land in 55). Accordingly, the Ebbsfleet spears could have been used by Britons who had fought in France, Gauls in Britain fighting against the Romans, or Gauls in Britain fighting with the Romans as auxiliaries.

The possible sword blade (ON 3911) from Iron Age trackway 170111, while relatively wide at 56mm for an Iron Age blade, is only just outside the normal width range of 36–52mm, and there are some wider examples, including the 60mm wide sword from Owslebury (Stead 2006, 46). While the width of the blade might be reminiscent of a *gladius*, the fragment could still be from a Late Iron Age sword.

Iron Age daggers such as ON 2988, which is from the colluvium, are not common finds in Britain. Most

examples, including one from Eyhorne Street, Kent (Champion 2011, 224, fig 4.25), seem likely to date to around the 5th century BC but there are a few later examples. One comes from grave 153 at Rudston in East Yorkshire. It has rounded shoulders like ON 2988 and is likely to date to the Late Iron Age (Stead 1991a, 71, fig 55, R153). Another example of a similar size and shape was found at Bigbury with other iron objects of Late Iron Age date (Thompson 1983, 273, no. 29, fig 19, 53). A 1st century BC dagger with square rather than rounded shoulders is known from Essendon, Hertfordshire (Stead 2006, 51) and there is another possible example from the Kelvedon burial (Sealey 2007, 8).

The Ebbsfleet example is considerably wider (44mm) than the Rudston and Bigbury weapons (29 and 28mm respectively) and closer to some of the earlier weapons. However, its tang is also much longer than those of examples thought to date to the 5th century BC (Fitzpatrick 2003). The other possible dagger from Zone 6 (ON 3871), which was found in a pit that probably dates to the early Roman period, is the same width as the finds from Rudston and Bigbury.

It is possible, then, that the two daggers are contemporary with the other Iron Age weapons from Ebbsfleet and date to the 1st century BC but an earlier date, contemporary with the Iron Age settlements, cannot be excluded.

As well as the certainly or probably Claudian belt fitting and buckle and scabbard bindings mentioned above, there are three other pieces of militaria that may date to the 1st century BC. Two are missile points. Although it was found in the colluvium, the long, square or lozenge-sectioned point of ON 698 finds parallels with Roman socketed *pila* of Republican date (see Scott, below), including several sites in France amongst which are Alésia and Bibracte where the finds are certainly or probably Caesarean in date. Socketed *pila* with simple points were a very common Republican weapon while *pila* of Imperial date typically – but not invariably – have a pyramidal or barbed tip. Similar parallels of Republican date can be adduced for ON 4094 which, although found in a late Roman context, is the socket and part of the circular shaft of a similar object, either a socketed *pilum* or a javelin point. *Pila* of Imperial date typically had flat tangs which were riveted to the wooden shaft.

While the two projectiles might be of Republican date, the interpretation of the third piece of militaria is less certain. A possible tanged arrowhead was found in the colluvium (ON 699) (see Scott, below). Eight similar objects found at Alésia were originally interpreted as tools, perhaps awls, but the subsequent publication of a further 12 from the siegeworks at Numantia, where they are interpreted as arrowheads, led to this interpretation being proposed for the finds from Alésia (Deyber 2008). While this may have been the function of the object from Ebbsfleet, it is difficult to place much emphasis on such a simple type of object found essentially unstratified in the colluvium.

Set against these potential Republican weapons is the absence of large hobnails where the underside of the head (which is often between 15–20mm in diameter) is decorated. These are well known from many, though by no means all, sites with Caesarean connections in France and Germany (Poux 2008a; Deberge *et al* 2009; Hornung 2012).

In summary, one or two objects may be suggested to be Roman socketed *pila* of Republican date. Some of the other weapons are certainly or probably British; the sword from Ebbsfleet Lane and the two daggers. And all four of the spearheads are of Iron Age type but may be Gaulish rather than British in origin. None of this evidence is clear cut but the potential mixture of weapons from different cultures is consistent with the mixed assemblages that are typical of the Caesarean period in France. With the exceptions of those from siege sites such as Alésia or *Uxellodunum*, these assemblages are also typically small and fragmentary (Poux 2008a).

In addition to these typological comparisons, an attempt was made to compare the radiocarbon dating of the Ebbsfleet enclosure with other sites that have plausibly been argued to be of Caesarean date. In his study of Bigbury hillfort, Thompson argued that a waterhole in the interior was infilled after the site was stormed in 54 BC (Thompson 1983, 250–1; 256). Modelling of the radiocarbon dates from the Ebbsfleet enclosure against the dates from the waterhole at Bigbury and those from the recently discovered Roman base at Hermeskeil near Trier, which is probably Caesarean (Hornung 2012), shows that there is a good level of agreement (see Fig 3.68). In addition there is also an archaeomagnetic date of *c* 100–60 BC from a hearth next to the well at Bigbury (Thompson 1983, 275–6). Radiocarbon dates are measures of statistical probability rather than historical dates, but it can be said that the radiocarbon dates do not exclude the

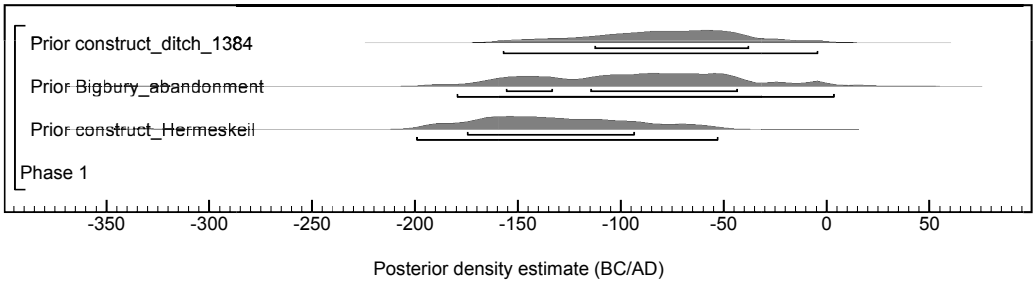


Fig 3.68 Posterior density estimates for the construction of ditch 1384, 'Hermeskeil earthwork' and abandonment of Bigbury

possibility that the Ebbsfleet enclosure was built during Julius Caesar's invasions of Britain.

Discussion

The evidence of the weaponry from the enclosure is suggestive but inconclusive. It is possible that the Ebbsfleet enclosure could be interpreted as part of the British defences against Caesar (Pl 3.41). Little weight should be attached to the fact that such a site was not mentioned by Caesar; the overnight march to the west in 54 BC could have simply rendered the defences redundant. But there is a historical setting in which the Ebbsfleet enclosure might be placed.

Julius Caesar records that he built bases on the Kent coast in both 55 and 54 BC. On both occasions the fleet needed repair after the ships had been damaged by storms.

In 55 BC Caesar ran the ships ashore on what he describes as a 'flat and open beach.' Five days later extensive damage was caused to the ships by high tides. The warships are described as having been beached but the transports were riding at anchor. Caesar does not give any details of the Roman base beyond commenting that the small size of it made it clear to the Britons that the Roman force was quite small. He also states that while the ships were being repaired some Britons came quite frequently to the camp (*BG* IV, 29–32), which might suggest that some of the repairs were undertaken in the base.

In 54 BC the fleet landed at 'the part of the island that last summer's experience had shown to have the best landing places.' 'The army disembarked and a suitable place was chosen for our camp.' The ships had been anchored on 'an open shore of soft sand' and 10 cohorts (approximately 4800 men) and 300 cavalry were left to guard them while the rest of the army marched to the west. A great storm two days later caused great damage to the ships, making them collide and then to be cast up on the shore (*BG* V, 8–10).

Caesar wrote that 'I decided that that the best thing for me to do, even though it involved an enormous amount of work, was to beach all the ships and enclose them within the fortifications of the camp. All this took us about ten days; the men worked non-stop day and night' (*BG* V, 11). The resulting camp is described as having been strongly fortified. The skilled craftsmen in the legions were left to repair the ships and others summoned from France as the British campaign continued.

Although much discussed, the sites of Caesar's landings or his camps are not known. Rice Holmes, who gave the most comprehensive review of this subject, suggested that the landing site in 55 BC was between

Pl 3.41 Overview of Iron Age–Romano-British settlement in Zone 6, with Zones 5, 4/Weatherlees Pond and 1–3 on the Ebbsfleet Peninsula beyond; River Stour, Deal Spit, Pegwell Bay and the Channel top left. The extent of green vegetation corresponds approximately with former areas of open water or marsh, with the cooling towers marking the north side of the eastern entrance to the Wantsum Channel; the limits of the early enclosure are indicated by a dashed line (view from north-west).

Walmer and Deal, with a camp close to Walmer Church (1907, 311, 317–18). He was largely followed in this by the most authoritative of recent commentators, Hawkes, though he identified the landing site more precisely as being close to Walmer Castle (1977, 155).

Rice Holmes proposed that the landing in 54 BC was between Sandown Castle, immediately to the north of Deal, and Sandwich, and that the base was established 'perhaps on the slight eminence near the village of Worth' (1907, 335, 664). Hawkes also suggested that the landing was near to Worth, an opinion that was based on the belief that the eastern mouth of the Wantsum Channel was much wider at that time and extended much further south. On the one hand this precluded finding an 'open shore of soft sand' near Sandwich (or Pegwell Bay), while on the other hand it allowed for the former presence of one near Deal 'long buried by the choking-up of the bay' (1977, 157).

However, as discussed above, the recent discovery near Sandwich of the sites at Archer's Low and Dickson's Corner and the Roman finds from near Stonar suggest that by a century later, at the latest, the mouth of the Wantsum was already quite narrow. On the basis of this evidence the area to the east of Worth was probably not open to the sea and it is more likely that it was marshland.

These attempts at reconstructing the contemporary shoreline and landscape are hindered by a lack of data. However, a careful consideration of the landing grounds required by fleets of the sizes that Caesar describes has made the important point that they could have been several kilometres wide, particularly if a rapid disembarkation was desired (Grainge 2002, 59–61). On the basis of the current understanding of the likely landforms and topography, it seems likely that the area around the eastern mouth of the Wantsum Channel could have met this requirement. There is certainly later evidence for fleets having used the area in such a way. A century after Caesar, Richborough was one of the military bases associated with the Claudian invasion and it is possible that it was directly accessible from the sea (Grainge 2002, 10–12; Clarke *et al* 2010, 15–16). In the medieval period Sandwich was an important international port and several war fleets are recorded as having gathered in the usually sheltered waters of Sandwich Haven immediately to the east of the town (Clarke *et al* 2010, 25, 73–5). The Haven was used as an assembly point and ships were victualled and maintained, while during the Hundred Years War it was an important port for shipping supplies to Calais.

The situations described by Caesar, particularly that of 54 BC, might also provide the context for the location and layout of the Ebbsfleet enclosure. Caesar stated that the army disembarked and a suitable place was chosen for the camp. That place was clearly not the same one as the landing place(s) and it was presumably chosen because of its suitability for a defensible land base from which the ships could also be protected. Caesar states that base was for a force equivalent to one legion but it cannot be assumed that there were no other elements to the defences.

It may be that the intention was to move the fleet to a safer mooring rather than to leave it riding at anchor on the coast, but that greater emphasis was initially placed on the rapid disembarkation of the army and their mustering and advance from the bridgehead. If this was the intention, the plan to move the ships was thwarted by the storm.

If the Ebbsfleet enclosure was associated with this campaign and the ships were anchored in Sandwich Haven or off what is now Pegwell Bay, then those ships that were seaworthy would have had to be brought through the mouth or mouths of the Wantsum Channel. If the Stonar spit did not extend northwards to the Ebbsfleet peninsula then there may have been a northern entrance to the Channel (see above). Such an entrance might have made moving the fleet to the Ebbsfleet enclosure and beaching them there easier, but it is also possible that portage, moving the ships across land, was used particularly for ships that were badly damaged.

At present it is only possible to speculate on what happened and where, but the apparent absence of contemporary activity within the excavated areas of the Ebbsfleet enclosure suggests, irrespective of the function of the enclosure, the defensive ditch or moat was an outer defensive work. The similarities in the size and shape of the ditch of the Ebbsfleet enclosure to the outer ditches at Alésia are particularly important here. At Alésia these outer ditches were not backed by ramparts, though some of the upcast from them may have been used to create scarps and counterscarp slopes that served to artificially deepen the ditches. In this scenario the moat was part of the outer defences of what effectively became a defended harbour or boat repair yard whose island location provided additional natural defences. Most of the activity would have been on the shore repairing the boats that are reported to have been beached along it. The presence of a smaller and more heavily defended enclosure(s) might therefore be anticipated. The possible *cippi* on the southern side of Ebbsfleet Hill could have protected a smaller defended enclosure of some sort.

It is worth recalling the reason that Julius Caesar gave for building such complex defences for the contrevallation at Alésia. The circuit of the siege works at Alésia was 16km long and 'it would not be easy to man the whole circuit' or to defend it from mass attack (*BG* VII, 72). The purpose of the both the contravallation and the circonvallation at Alésia was to give time to marshal the thinly spread Roman troops where they were most needed. This may also have been the case at Ebbsfleet. Even though the base had to withstand attack and potentially siege, Julius Caesar apparently left the same number of troops to defend the base and the damaged fleet as he had done initially.

Roman military harbours are known from the Tiberian naval base at Velsen on the North Sea in the Netherlands and, less certainly, at the Augustan forts on the Hoffestadt at Haltern on the River Lippe. The base at Velsen was built as part of the campaigns of Germanicus and had extensive moles, harbour works and at least one ship shed. Its defences were strengthened, possibly immediately before or after an assault on it which probably took place

during the Batavian revolt in AD 28, by the digging of a large ditch that effectively separated the base from the mainland (period 2b; Morel 1987; Bosman and de Weerd 2004; Lendering and Bosman 2012).

Lastly, it may also be noted that the human remains from the Ebbsfleet enclosure and the last datable examples from the Zone 6 settlement are all disarticulated and in some cases they are weathered and have evidence for the bones having been gnawed. Some have evidence for sharp weapon trauma.

The weathering could result from excarnation. As most of the Middle Iron Age burials found in the scheme, especially in Zones 13 and 15, are formal inhumation burials this might suggest that the remains from Zone 6 derived from the Early Iron Age occupation. However, some of the remains have been radiocarbon dated to the Late Iron Age. Nor is it certain that excarnation was actually widely practised in the Iron Age, rather than some other form of secondary burial, because evidence for weathering and gnawing is rare (Madgwick 2008). The condition of the human remains from Late Iron Age contexts in Zone 6 may be entirely unrelated to the construction of the Ebbsfleet enclosure but they would also be consistent with a dramatic end to the Iron Age settlements. Battlefield casualties have been identified at a number of British hillforts and in some cases, for example Maiden Castle, Dorset, they can plausibly be associated with the Claudian conquest or events of in its aftermath (Jones and Randall 2010; Redfern 2011).

Conclusion

The evidence currently available is far from conclusive but a case can be made for the Ebbsfleet enclosure being associated with Julius Caesar's invasions of Britain, and specifically with that of 54 BC. This is based on the archaeological evidence of:

- The construction of a short-lived major defensive enclosure in the 2nd–1st centuries BC that does not find ready parallels amongst British Iron Age sites;
- The location of the enclosure on an island peninsula projecting into the sea;
- The radiocarbon dating which suggests that it was probably built in the 1st century BC and had passed out of use completely before the Claudian invasion of AD 43;
- The decrease, if not cessation in activity in the existing Iron Age settlement(s) in Zones 6 and 4. This is shown by stratigraphic, ceramic and numismatic evidence. The latter suggests a significant change in coin use around the middle of the 1st century BC. Holman places this between 80/75 and 65/60 BC (see Vol 2, Chap 1);
- The lack of contemporary activity within the defended enclosure;
- The deliberate and systematic recutting of the circuit of the completely infilled Late Iron Age defences in the early Roman period;
- The parallels for the size and shape of the ditch at Ebbsfleet with the outer Roman siege defences of 52 BC at Alésia and with the defences at Armency associated with the battle against the Helvetii in 58 BC. Both are temporary defensive works and not marching camps or bases. At Alésia and Ebbsfleet these defensive elements were not backed by ramparts. One of the ditches at Alésia was used as a moat and the sedimentary evidence suggests that this may also have been done at Ebbsfleet;
- The presence in Zone 5 of what may be a distinctively Roman type of defensive trap: rows of *cippi*;
- The presence of Late Iron Age weaponry including spears that may well be Gaulish rather than British although the allegiance of those who used them is uncertain.

Supporting archaeological evidence includes:

- The limited dating evidence from the brooches which do not indicate any significant activity in the second half of the 1st century BC;
- The radiocarbon dating of the Ebbsfleet enclosure and other sites suggested to be associated with Julius Caesar's Gallic War of 58–51 BC;
- The possible presence of Roman Republican weaponry in the form of one, and possibly two, socketed *pila*;
- The presence of broadly contemporary disarticulated human remains, some with evidence of wounds caused sharp by weapons, which contrasts with the practice of formal burial both earlier and later in the Iron Age (see above, and also Vol 2, McKinley, Chap 13).

Supporting historical evidence comes from the writing of Julius Caesar. He records that:

- In both 55 and 54 BC the invasion armies landed in East Kent;
- In 54 BC the fleet was anchored on an open shore of soft sand. On topographic grounds this must have been between Deal and the North Foreland of Thanet;
- In 54 BC he created a well-defended camp so that the ships that had been damaged in a storm could be repaired;
- That this camp was attacked but it was defended successfully.

While this hypothesis goes against the grain of much recent fashion in studies of the British Iron Age, it is entirely consistent with recent work in continental Europe. That work has allowed the identification of Gaulish *oppida* and Roman bases, Roman siege works,

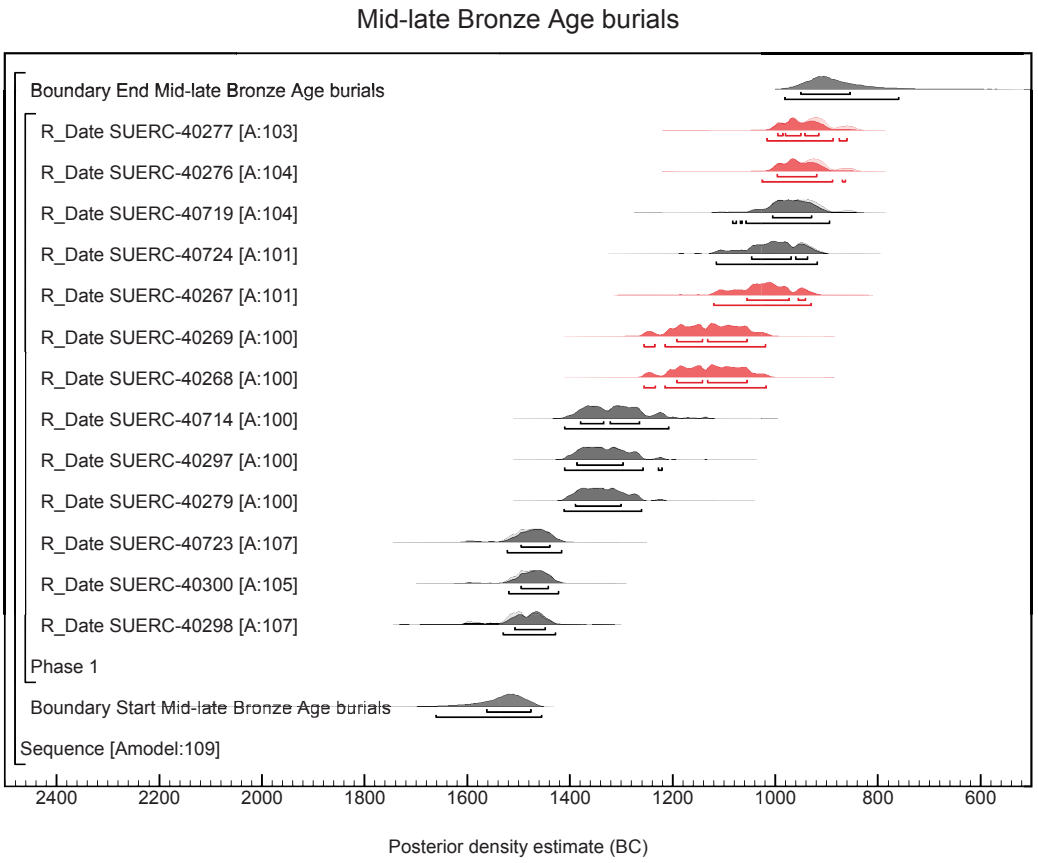


Fig 3.69 Radiocarbon probability distributions for Middle–Late Bronze Age burials

battlefield sites, burials and votive offerings that can certainly or plausibly be associated with Caesar's Battle for Gaul (eg, Poux 2008a; Roymans *et al* 2012). Several of these sites can be identified with particular campaigns and battles with certainty. Only further work will tell if the Ebbsfleet enclosure is indeed such a site. That work is now in hand as part of a Leverhulme-funded research project being undertaken by the writer at the University of Leicester.

Dating, finds and environmental summaries

Radiocarbon dating *by Alistair J Barclay and Chris J Stevens*

Middle–Late Bronze Age

Fifteen radiocarbon measurements were obtained for selected samples of human bone and charred plant remains (Tables 3.3–4). Thirteen human burials were selected for radiocarbon dating and were found to fall within the Middle and Late Bronze Age periods (*c* 1500–800 cal BC). Details of these burials and their radiocarbon dates are given in Table 3.3 with the results placed in chronological order in Figure 3.69. As with the burials of Early Bronze Age date this group includes both cremated and inhumed remains. The earliest (cremation) burial 203001, dated by SUERC-40298, is one of three burials that were probably made in the 15th century BC. The other two are both inhumation burials (dated by SUERC-40300 and 40723). Three further burials (166051, 200090 and 126180) are slightly later and were made during the 14th or possibly the early 13th century BC (SUERC-40279, 40297 and 40714). Two cremation burials (SUERC-40268 and 40269: graves 252223 and 179102) date to the 12th century BC or later and belong to a time when Deverel-Rimbury style pottery was going out of use. A further five burials belong to the centuries spanning the 11th to the early part of the 9th century BC. As with the human remains of Early Bronze Age date, these later burials also include both cremation and inhumation burials with no clear chronological pattern.

Two further measurements (SUERC-40740 and 40741) were obtained on charred barley grain recovered from pit 159256 (Table 3.4). This deposit is likely to have been placed at some point during *990–820 cal BC (at 95% probability. See Fig 3.70: modelled as First Cereal Deposit)*.

Iron Age

Twenty radiocarbon dates were obtained on features of Iron Age date (Table 3.5). Twelve are on human bone, six on animal bone and two are on charred food residue on pottery. Ten of the measurements on human bone were to confirm the dates of burial and bone deposits. Three dates (SUERC-40732–34) on fowl bones were to confirm their Iron Age date and another was to confirm the date of a horse burial (SUERC-40738). In addition, four dates were obtained on material from earthwork ditches 3131 and 1384 to determine likely dates of construction. Details of the samples and their

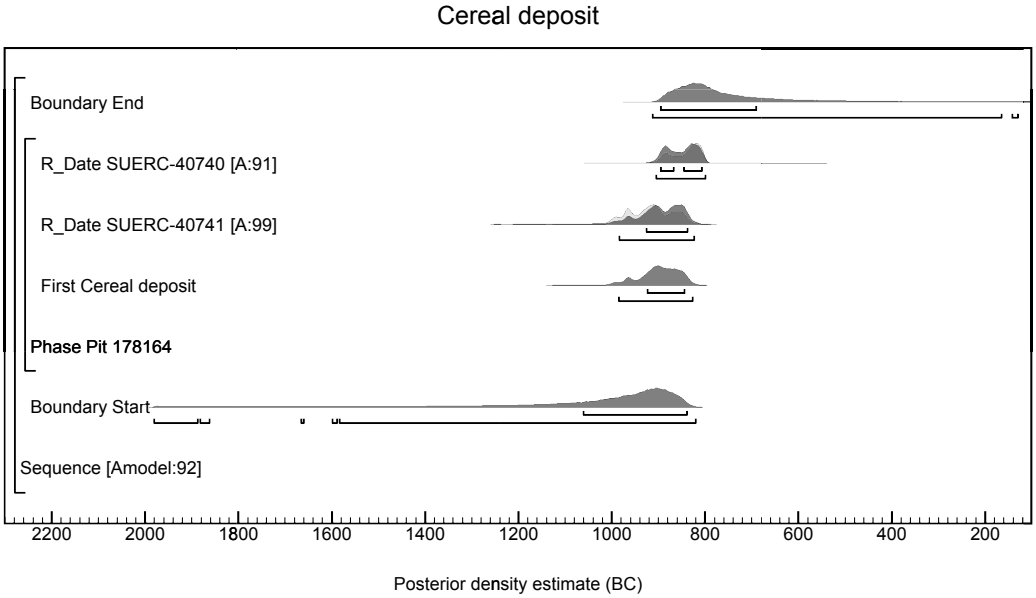


Fig 3.70 Radiocarbon probability distributions for Late Bronze Age cereal deposit in pit 178164

Table 3.3 Radiocarbon measurements obtained for mid- to Late Bronze Age features

Laboratory code	*Feature and context*	*Material identification*	*Radiocarbon age (BP)*	*$\delta^{13}C$ (‰)*	*$\delta^{15}N$ (‰)*	*C:N ratio*	*Calibrated date range (95.4% confidence)*
SUERC-40267	Grave 252215 (252216)	Cremated bone indet.	2855±30	-21.0			1130–920 cal BC
SUERC-40268	Grave 252223 (252224)	Cremated bone indet.	2925±30	-23.5			1260–1010 cal BC
SUERC-40269	Grave 179102 (179103)	Cremated bone indet.	2925±30	-23.2			1260–1010 cal BC
SUERC-40276	Grave 126001 (126002)	Cremated bone indet.	2790±30	-22.3			1020–840 cal BC
SUERC-40277	Grave 146016 (146013)	Cremated bone indet.	2785±30	-23.2			1010–840 cal BC
SUERC-40279	Grave 166051 (166052)	Cremated bone indet.	3060±30	-20.7			1420–1260 cal BC
SUERC-40297	Grave 200090 (200089)	Human bone, left tibia	3055±30	-20.6	11.0	3.2	1420–1220 cal BC
SUERC-40298	Grave 203001 (203002)	Human bone, femur	3230±30	-20.8	10.7	3.2	1610–1430 cal BC
SUERC-40300	Grave 221014 (221016)	Human bone, right femur	3210±30	-21.0	10.4	3.2	1530–1410 cal BC
SUERC-40714	Grave 126180 (126181)	Human bone, left tibia	3040±35	-20.7	11.3	3.2	1410–1200 cal BC
SUERC-40719	Grave 275007 (275009)	Human bone, left femur	2810±35	-20.0	9.0	3.2	1060–840 cal BC
SUERC-40723	Grave 290481 (290482)	Human bone, left tibia	3210±35	-21.0	10.2	3.3	1610–1410 cal BC
SUERC-40724	Grave 198245 (198244)	Human bone, left femur	2840±35	-21.0	12.7	3.3	1120–910 cal BC

Table 3.4 Radiocarbon dates for cereal from pit 159256

Laboratory code	*Feature and context*	*Material identification*	*Radiocarbon age (BP)*	*$\delta^{13}C$ (‰)*	*Calibrated date range (95.4% confidence)*
SUERC-40740	Pit 159256 (178164)	Charred cereal grain, naked barley grain	2680±35	-22.9	910–790 cal BC
SUERC-40741	Pit 159256 (178164)	Charred cereal grain, naked barley grain	2770±35	-24.6	1010–830 cal BC

dates can be found in Table 3.5 and are plotted in Figure 3.71. All of the samples selected for dating produced results that fall within the later Iron Age period (4th to 1st centuries BC).

Seven of the eight inhumation burials selected for radiocarbon dating returned dates within the 4th to 3rd centuries BC. The exception is from grave 147255 (SUERC-40286), which dates to some point within the 2nd or 1st century BC. Cremated bone from a grave (147141) and a posthole/pit (189050) are both much later. The cremation burial 147141 (SUERC-40271) probably belongs to the pre-conquest Iron Age of the later 1st century BC or early 1st century AD. The cremated bone from posthole/pit 189050 (SUERC-40272) is slightly earlier and is likely to derive from a burial that was made either in the later 2nd century BC or the earlier half of the 1st century BC.

Three fowl bones were dated, from pits 156135 (SUERC-40732) and 168115 (SUERC-40733), and SFB 174060 (SUERC-40734). In all three cases the animals were found to be of Middle Iron Age date (later 4th century to earlier 1st century BC). A horse burial made in pit 177193 (SUERC-40738) was deposited at some point during the 4th or 3rd century BC.

Two samples of internal charred food residue on pottery were dated (SUERC-40748 and 40749), both of

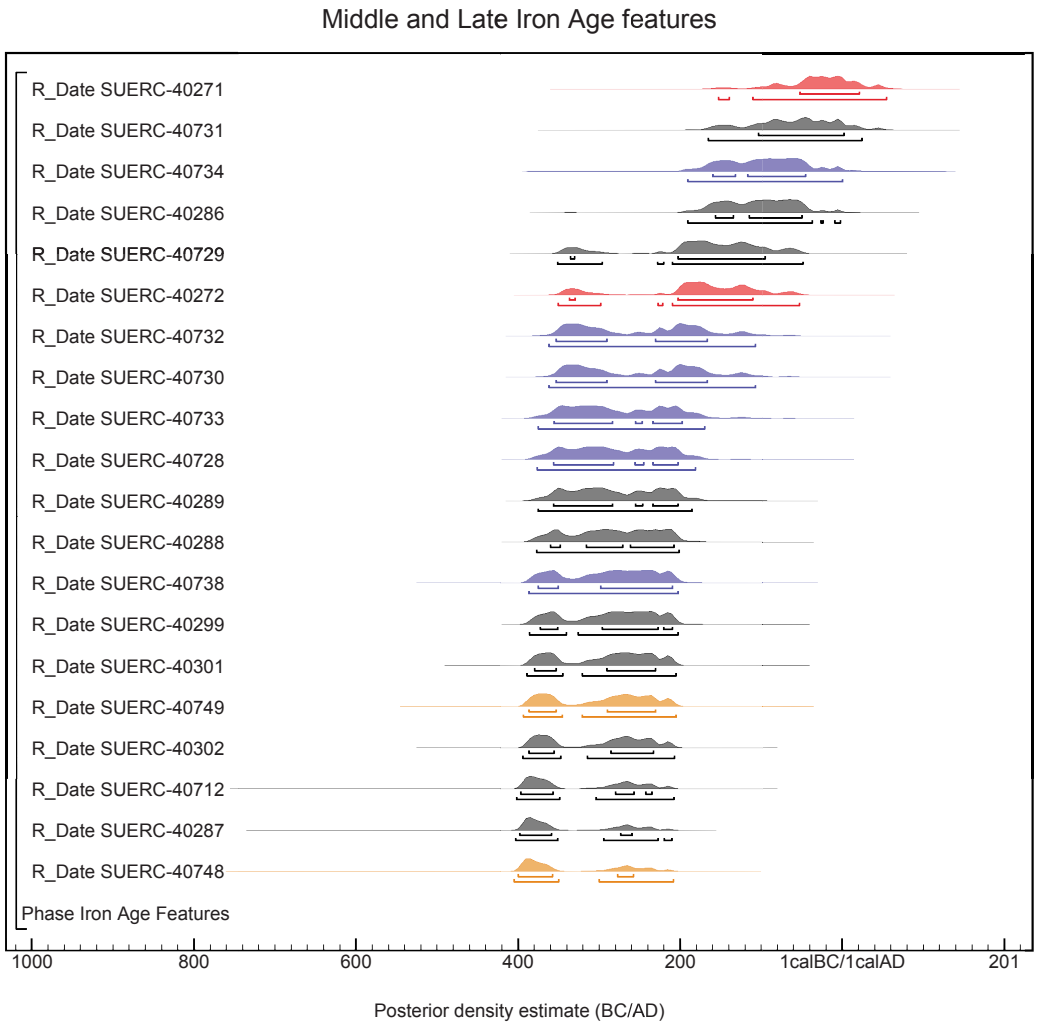


Fig 3.71 Radiocarbon probability distributions for Middle and Late Iron Age features

which returned measurements that fall within the 4th and 3rd centuries BC.

An attempt was also made to date the construction of two linear earthworks represented by ditch cuts 1384 and 3131 to identify whether they were constructed during the 2nd or 1st century BC. In order to date these events an assessment of all possible sample material was undertaken and a simulation model based on the available samples and stratigraphy was constructed using the OxCal programme.

Three samples of disarticulated bone (human skull fragments and a sheep mandible) from the primary ditch fill of 1384 were dated by SUERC-40729–31. As the bone was disarticulated the assumption was made that it was all residual but possibly not much older than the digging of the ditch. On this basis the youngest of the samples is likely to be closest in date to the construction of the ditch. This was modelled as *Last_Construct_ditch 1384* (see Fig 3.66) and gives a date for construction of *160 cal BC–1 cal AD (at 95% probability) or more likely 120–30 cal BC (at 68% probability)*. Burial 1110 was made in a grave that cut the uppermost ditch fill. Given the size of the ditch cut, the time between its digging and the placing of the burial probably involved a lapse of time that is likely to equate to at least several years and possibly decades. Ditch silting has been estimated using the OxCal *Date* function (Fig 3.66 above) and this returns a date estimate of *120 BC to 50 AD (at 95% probability) or more likely 80 BC and 10 AD (at 68% probability)*. The difference between the date for the burial and the construction of the ditch has been modelled (with the assumption that there was little or no hiatus between the final siting and the placing of the burial). The result suggests that ditch silting could have taken somewhere between *40 to 130 years (at 68% probability) or 10 to 180 years (at 95% probability)*.

Estimating a more precise date for the construction of ditch 3131 was restricted by a lack of sample material. Only a single sample of disarticulated bone was available from the primary fill, which in the model presented here was treated as a *terminus post quem* (Fig 3.66 above) modelled as *After_SUERC-40728*). The upper fills of the ditch cut were sealed by burial 3121 that had been previously dated by NZA-28976 (Barclay 2009, 170). As the two dates were in sequence a construction date for the ditch and earthwork was estimated using the OxCal *Date* function. This gave a likely estimate for construction at some point between *190–20 cal BC (at 68% probability or 350–20 cal BC at 95% probability)*. Whilst this result lacks the precision of the age estimate for ditch 1384, it is not incompatible. A date estimate

was also calculated for the secondary recut ditch using the OxCal *Date* function. This gives a result for the cutting of the ditch as happening at some point between *20 cal BC–100 cal AD (68%) or 50 cal BC–240 cal AD (at 95% probability)*.

The two burials made in the silted up primary ditch (1384 and 3131) both date to the pre-conquest period. Burial 3121 NZA-28976 is likely to have been placed at some point between *50 cal BC–20 cal AD (at 68% probability) or 90 cal BC–40 cal AD (at 95% probability)*. Burial 1110 NZA-28975 is likely to have been placed at some point during *40–10 cal BC (30.6%) and 10 cal BC–40 cal AD (37.6%) (at 68% probability) or 50 cal BC–to 70 cal AD (at 95% probability)*.

The construction date for ditch 1384 can also be compared with two other sites discussed above. Figure 3.68 presents the construction date for Hermeskeil and for the abandonment of Bigbury based on the radiocarbon dates presented in Table 3.6. Hermeskeil was constructed at some point between *200–50 cal BC (at 95% probability)* and Bigbury could have been abandoned at some point during *180–1 cal BC (at 95% probability) or more likely 160–40 cal BC (at 85% probability)*. Figure 3.68 presents these results with the construction date for ditch 1384 in date order.

Metalwork *by Ian Scott*

Metalwork from Iron Age contexts was found in Zones 3–7, 10, 12–13 and 26, but in most cases the numbers of finds were limited. The finds from Zone 3 comprise unidentified copper alloy fragments from a Late Iron Age or early Roman gully (172034). In Zone 4 a plain

Table 3.5 Radiocarbon dates obtained for Iron Age features

Laboratory code	*Feature and context*	*Material identification*	*Radiocarbon age (BP)*	*$\delta^{13}C$ (‰)*	*$\delta^{15}N$ (‰)*	*C:N ratio*
SUERC-40271	Grave 147141 (147139)	Cremated bone indet.	2025±30	-20.6		
SUERC-40272	Posthole/pit 189050 (189052)	Cremated bone indet.	2135±30	-23.7		
SUERC-40286	Grave 147255 (147256)	Human bone, left femur	2080±30	-19.6	11.4	3.2
SUERC-40287	Grave 136033 (136034)	Human bone, left femur	2285±30	-20.4	9.3	3.2
SUERC-40288	Grave 153028 (153027)	Human bone, left femur	2215±30	-20.9	10.2	3.2
SUERC-40289	Grave 126127 (126128)	Human bone, left fibula	2200±30	-21.5	9.0	3.2
SUERC-40299	Grave 220092 (220093)	Human bone, left femur	2230±30	-21.0	9.9	3.2
SUERC-40301	Grave 246011 (246012)	Human bone, right femur	2240±30	-20.4	11.2	3.2
SUERC-40302	Grave 248090 (248092)	Human bone, left tibia	2255±30	-21.2	10.8	3.2
SUERC-40712	Grave 205111 (205108)	Human bone, left femur	2280±35	-20.0	9.7	3.2
SUERC-40728	Ditch 3131 (3146)	Animal bone, cattle left metacarpal	2200±35	-22.1	7.5	3.2
SUERC-40729	Ditch 1384 (1088)	Human bone, frontal vault	2130±35	-20.9	10.3	3.3
SUERC-40730	Ditch 1384 (1184)	Animal bone, sheep right mandible	2165±35	-21.2	4.4	3.3
SUERC-40731	Ditch 1384 (1184)	Human bone, temporal vault	2045±35	-20.8	9.7	3.3
SUERC-40732	Pit 156135 (156136)	Animal bone, femur, fowl	2165±35	-20.9	7.9	3.4
SUERC-40733	Pit 168115 (168117)	Animal bone, juvenile femur, fowl	2190±35	-20.9	10.3	3.3
SUERC-40734	SFB 174060 (174073)	Animal bone, ulna, fowl	2075±35	-20.4	9.3	3.3
SUERC-40738	Pit 177193 (177091)	Animal bone, tarsal, horse	2230±35	-22.4	6.9	3.3
SUERC-40748	Pit 173188 (173189)	Pottery charred residue	2290±35	-26.2		
SUERC-40749	SFB 174060 (174068)	Pottery charred residue	2250±35	-27.0		

Table 3.6 Radiocarbon dates obtained from ditches 1384 and 3131, Bigbury and Hermeskeil (Germany)

Feature	*Feature type*	*Context*	*Material type*	*Material identification*	*Laboratory code*
EKA					
3131	Ditch	3131 (3146)	Animal bone	Left metacarpal (5.0g) – Cattle	SUERC-40728
1384	Ditch	1384 (1088)	Human bone	Frontal vault (1.2g)	SUERC-40729
1384	Ditch	1384 (1184)	Animal bone	Right mandible (5g) – Sheep	SUERC-40730
1384	Ditch	1384 (1184)	Human bone	Temporal vault (1.2g)	SUERC-40731
Bigbury					
Waterhole	Dump layer in waterhole	5	Charcoal	Not known	BM-1530
Waterhole	Dump layer in waterhole	5	Charcoal	Not known	BM-1768 BM-1768 (revised)
Hermeskeil					
	Ditch fill	10	Charcoal	Twig/branch. 3–5 years old	ERL-16189
	Ditch fill	10	Charcoal	Twig/branch. More than 10 years old	ERL-16187

iron ring (ON 3534) was found in ditch (190288) of Middle or Late Iron Age date, and a large latchlifter (ON 3530) was found in an Iron Age ditch 190272.

Zone 5

There is a penannular brooch (ON 887) from pit 254114 in Zone 5. The pit is phased to the Middle Iron Age, but the brooch is from the upper fill of the pit and could be later in date. A similar though larger brooch was found in an early Roman ditch in Zone 19.

Zone 6

There are just six iron objects and one copper alloy object from Iron Age contexts, and a further 11 objects from contexts assigned a Late Iron Age or early Roman date. The latter comprise two copper alloy objects, seven iron objects, and two nails.

Five finds are from contexts assigned a generic Iron Age date. These include four objects that were found on cobbled surfaces and comprise a possible copper alloy arched pin stem (ON 3880), perhaps from a ring-headed pin, and fragments of a scythe blade (ON 3890) (both context 298137, feature 291102), and a tanged fragment possibly from a sword blade (ON 3911) and a link or brace made from an iron loop, twisted to form the shank with loops at each end (ON 3910) (both cobbled surface 126275). The pin stem (ON 3880) may be from an early form of ring-headed pin, and the link (ON 3910) could be a component of a cauldron chain. The final object is an incomplete nail from a stakehole (context 254043, feature 169003). The nail is likely to be intrusive from Roman levels.

The only find from an Early to Middle Iron Age context is a blade from a pair of shears from ditch 170101 (ON 3941). The only find from a feature phased to the Middle Iron Age, a single hobnail from pit 170196, is probably intrusive.

A small iron penannular ring or loop which appears to have a notched or cable-patterned outer edge (ON 3225) was recovered from ditch 170143. This is the only find from a Late Iron Age context. The function or purpose of the object is uncertain.

There is a small number of metal finds from Late Iron Age or early Roman contexts. These include two small nails (context 243108, ditch 190517; context 223106, ditch 190465) and a nail stem fragment (context 262113, ditch 170082). There are also pieces of miscellaneous metalwork: rod (ON 3342, context 239167, ditch 1904); bar fragment (ON 4464. context 330009, ditch 190436); and three broad strip fragments (ON 4096, context 232113, pit 232111).

More interesting are a spearhead (ON 3292), a dagger fragment (ON 3871), a copper alloy one-piece sprung brooch (ON 2181), a cast copper alloy handle probably form a tankard (ON 2180) and three knives (ON 2117, ON 2165, ON 3341). The spearhead (ON 3292) is poorly preserved, heavily encrusted and in four pieces. It has a leaf-shaped blade which appears from

Calibrated date range (95.4% confidence)	*Posterior density estimate (95% probability)*
160 cal BC– cal AD 60	
360–50 cal BC	
200–1 cal BC	
410–210 cal BC	
380–200 cal BC	
380–180 cal BC	
390–200 cal BC	
390–200 cal BC	
400–200 cal BC	
410–200 cal BC	
380–180 cal BC	*380–180 cal BC*
360–40 cal BC	*340–320 cal BC 1.1%* *220–40 cal BC 94.3%*
370–100 cal BC	*350–390 cal BC 7.8%* *260–50 cal BC 87.6%*
170 cal BC– cal AD 30	*170 cal BC to 10 cal AD*
370–100 cal BC	
380–170 cal BC	
200 cal BC– cal AD 10	
390–200 cal BC	
410–200 cal BC	
400–200 cal BC	

Radiocarbon age (BP)	*$\delta^{13}C$ (‰)*	*$\delta^{15}N$ (‰)*	*C:N ratio*	*Calibrated date range (95.4% confidence)*	*Archaeological phase*
2200±35	-22.1	7.50	3.2	380–180 cal BC	
2130±35	-20.9	10.30	3.3	360–40 cal BC	
2165±35	-21.2	4.40	3.3	370–100 cal BC	
2045±35	-20.8	9.70	3.3	170 cal BC– cal AD 30	
2080±45	-24.4				Argued to be associated with abandonment of hillfort
1920±35 2060±50	-25.6				Argued to be associated with abandonment of hillfort. Bowman *et al* (1990)
2078±35					Primary fill of defensive ditch. Charcoals suggested to be from a wickerwork superstructure
2107±35					Primary fill of defensive ditch. Charcoals suggested to be from a wickerwork superstructure

the breaks to have had a diamond, or lozenge, cross-section. Its socket is partly missing. Only a little of the dagger blade (ON 3871) survives, but this shows that the blade is double-edged, quite narrow and originally tapered to its point. The one-piece sprung brooch (ON 2181) with flat triangular bow and four-coil spring is a pre-Conquest type generally dated to the first half of the 1st century AD but with some examples from 1st century BC contexts (Mackreth 2011, 14–20; see also Butcher 2001, 41). The cast copper alloy handle (ON 2180) is simply decorated in an openwork curvilinear scheme and is probably a tankard handle.

Two of the three knives (ON 2117, ON 2165) have strongly curved blades and are of an Iron Age form, which continued in use up to the end of the 1st century AD at least. These are classified by Manning (1985, 118, fig 29) as his Type 23. The third knife (ON 3341) is probably of Manning Type 18, which was a common form and widely used during the Roman period.

The small numbers of finds from Iron Age contexts precludes any detailed consideration of the contexts in which objects were found. Most finds (eight) came from ditch fills, and include a shears blade (ON 3941), a penannular ring (ON 3225), a cast copper alloy handle (ON 2180) and whittle tanged knife (ON 3341). Others finds (four) are from pits, and include a tanged dagger fragment (ON 3871), a simple one-piece sprung brooch with flat section bow (ON 2181) and a whittle tanged knife (ON 2165).

Four finds came from cobbled surfaces and comprise a tanged blade fragment, possibly part of a sword (ON 3911), a link or brace formed from twisted rod (ON 3225), fragments of a scythe blade (ON 3890) and the possible stem of a ring headed pin (ON 3880). One knife (ON 2117) was recovered from a ring gully.

In addition to stratified material, there are a number of metal objects of Iron Age type from unphased contexts and colluvial deposits. They include agricultural tools, comprising a scythe blade (ON 3940) from context 252254, a spud (ON 668) from context 207048, and a rake prong or tine (ON 2166) from context 258045. The scythe blade (ON 3940) is complete and is a short blade of a type found for example at La Tène itself (Vouga 1923, pl xiv, no. 5; pl xxv, no 2). The form of the blade would suggest that this is an Iron Age scythe and predates the Claudian invasion.

Other finds include a 'traveller' or tyre runner (ON 2960) from layer 305072. Travellers or tyre runners were used by wheelwrights to measure the circumference of the felloe when making a one piece tyre for a wheel. Another example of a tyre runner was recovered from grave 126204 in the eastern Roman cemetery in Zone 19 (see Chap 4). These objects are found in Late Iron Age cremation burials but also on settlement sites and in hillforts (Scott 2012b, 152–6; see also Luke 2008, 222–3), and sometimes have been identified as circular knives (eg, Luke 2008, 222).

There are a few weapons which hint at a date prior to the Claudian invasion of the mid-1st century AD. The long lozenge-section point (ON 698) may be a weapon of late Republican or early Imperial date, rather than later in date, and the possible tanged arrowhead (ON 699) is comparable to similar objects found at Numantia (Spain) and at Alesia (Côte d'Or) amongst other sites (Deyber 2008). However, the identification of this particular form of object as an arrowhead is not completely certain and similar objects have been identified as tools. Two of the three spearheads from the colluvium have blades with a distinctive wavy outline (ON 2957, ON 3200). The asymmetrical outline of these blades is reminiscent of wavy spearheads found in Europe. These spearheads are an Iron Age type and probably pre-date the Claudian invasion.

The tanged dagger blade (ON 2988) is not readily identifiable as either an Iron Age or a Roman dagger form, although there are not dissimilar daggers from Cadbury Castle, Somerset (Barrett *et al* 2000, 236, 370, fig 35, nos 53 and 62) – unfortunately from surface deposits and again not securely stratified. The scabbard bindings (ON 692, 2120, 3223) are probably from mid-1st-century sword scabbards. They are distinctly different from earlier Roman scabbard bindings, or from 2nd-century or later scabbard fittings.

The tools include a number of agricultural tools but also woodworking and other craft tools. Notable agricultural tools include a complete ploughshare (ON 305) comparable to examples from Bigbury, Kent and Danebury, Hants and probably of late Iron Age or early Roman date. Three spuds (ON 307, ON 4027, and ON 668), a scythe blade fragment (ON 306) and a socketed reaping hook (ON 351) were also recovered.

Amongst the items of personal adornment is a copper alloy ring-headed swan's neck pin (ON 3347) of Iron Age date.

Zones 7–26

There are seven objects from Iron Age contexts in Zone 7, including a nail and fragment of copper alloy wire from grave 136139. The remaining finds comprise either miscellaneous fragments or nails. Zone 10 finds include a fragmentary Colchester brooch (ON 211) of mid-1st century date from Late Iron Age or early Roman ditch 194104.

Iron Age finds from Zone 12 comprise for the most part nails and miscellaneous fragments but include the end of a possible spatula probe (ON 4091) from Late Iron Age ditch 190149. Four objects come from graves in the Middle Iron Age cemetery in Zone 12, and include a fragmentary iron ring (ON 2) from around the left humerus of the adult female burial in grave 166005.

Finds from Zone 13 include a ring-headed pin (ON 4575) from Early to Middle Iron Age pit 248027 and a padlock bolt (ON 1523) from pit 126141. Finally, Zone 26 produced an iron tang and collar and a nail stem from pit 226001.

Worked stone *by Ruth Shaffrey*

Querns

A total of 21 contexts of later prehistoric date produced quern fragments, amongst which there are six saddle

querns, two rotary querns and the rest are of indeterminate form. Unphased contexts also produced a further five saddle querns likely to be of prehistoric date.

The saddle querns are of various forms, with some demonstrating very little shaping and clearly showing their production from boulders (eg, ON 2203 (Fig 3.72, 4) and ON 3241, Vol 2, Fig 6.4, 5). The function of the saddle querns may also have varied as some examples have deep basin-shaped working areas (eg, ON 2203; also ON 3242, Vol 2, Fig 6.2, 2), whereas others are mainly flat. All the saddle querns are made from Folkestone Beds Greensand.

Two fragments of rotary querns were recovered from later prehistoric contexts. One of these is a fragment of lava from pit 211043 (upper fill 211051). The pottery from the pit indicates a Middle Iron Age date for the lava quern, although there is a slim chance that the lava came from another (mid-Saxon) pit that was recorded as having cut pit 211043. Lava querns are normally dated to the Roman conquest onwards or occasionally to the very late Iron Age, however this quern may add to a small body of evidence for the pre-Roman importation of lava querns (Manby and Fenton-Thomas 2009, 185). Lava does not survive well in the soils of much of Kent, so tantalising glimpses are all we may ever have, but this fragment is another indicator that the presence of lava should be recorded, however meaningless the lumps may appear on site.

A single rotary quern fragment of Folkestone Beds Greensand (ON 3971) was included in the backfill of pit 291130 (291131) securely dated to the Early–Middle Iron Age (450–350 BC) by a significant assemblage of pottery from the pit. Querns of the Early–Middle Iron Age transition and Early Iron Age are far less common than their Middle Iron Age counterparts and published examples of early querns in Kent currently date only to the Middle Iron Age, for example from Dartford (Shaffrey 2011a, 145). There are at least two unpublished examples of similar date, however, from North Foreland, Broadstairs (E Blanning pers. comm.; Gardner 2006) and one from South Dumpton Down (E Blanning pers. comm.; Perkins 1995b). As these querns are also of Folkestone Beds Greensand, the evidence indicates that the quern industry at Folkestone was forward thinking and quick to adapt to new technology. The early appearance of rotary querns here in Zone 6 suggests that the occupants were probably of a higher than average status – the new form of quern took significantly longer to manufacture and was probably of far higher value than its saddle quern counterparts. That early rotary querns were made from the same material as the saddle querns, also shows that pre-Roman quern supply continued to be locally sourced. The transition to 'new' materials such as Millstone Grit was not a result of technological change but of cultural change – occurring sometime during the Roman period.

Catalogue

4. Saddle quern, complete. Fig 3.72. Greensand, Folkestone beds. Unshaped boulder used as saddle quern or mortar with deep basin, pecked and slightly worn. Mortar on the upper. surface indicates reuse in a structure. Measures 660 x 290 x 230mm thick. ON 2203. Zone 21. Ctx 194135. Secondary fill of pit 194134.

Other worked stone

Chalk was used for a number of objects from the Early Iron Age onwards and the evidence indicates that it was being actively worked within Zones 6 (which produced chalk debris) and 12 (which produced a partially perforated disc – perhaps an unfinished spindle whorl, ON 4131, Fig 3.72, 6). Chalk was also used to produce three large weights (Zones 13 and 19), comparable to weights found along the A2 (Shaffrey 2012) and showing varying wear suggesting suspension from ropes and poles (eg, ON 1534, Fig 3.72, 8). The precise function of these weights is unknown and the very different levels of finish, size and types of wear indicate that they did not all serve the same purpose. Possibilities for the less visible weights might have been to weigh down fishing nets or as counter-weights in a well (Philp 1958), whilst those that were intended to be visible could have been thatch weights or weights for gates. Three large flints could have served a related function, although they are entirely unworked.

Chalk formed the bedrock to some zones and was easily accessible in others, so its exploitation is no surprise. There is increasing evidence for the exploitation of chalk in Kent for a variety of purposes and it seems that where chalk artefacts are found there is often evidence for its having been worked on site. Its, no doubt, striking appearance when fresh probably also made it appealing from a decorative perspective. This is particularly true for the three large weights.

A single grooved stone was recovered from the Middle Bronze Age fill of pit 211043 (211046) in Zone 13 (Fig 3.72, 10). These stones are identified as arrow polishers or shaft straighteners but the variable sizes and profiles of the grooves, as well as the different level and types of wear, points to multiple purposes for these tools (for example Davis 1982, 110–111; Dorrell 1983). The function of this tool is therefore unclear at present, however, the V-shaped section would seem not to have been caused by the rotation of rounded arrow shafts in order to straighten out kinks but by something straight-sided. It awaits further parallels.

Two hammerstones, one of flint, the other a quartzite pebble, were recovered from Zones 6 and 13.

The worked stone from prehistoric phases of the EKA2 is largely indicative of domestic activity such as spinning, food processing and possibly fishing. As with the querns, the principal materials of other objects (chalk and flint) would have been available on or very near the site. Thus the people who lived in this area, need have travelled no great distance to obtain any of the stone tools they needed, or to find the raw materials to make them themselves.

Catalogue

6. Partially made spindle whorl. Fig 3.72. Chalk. Partially finished and not quite circular. The shaped sides and flattened surfaces have lots of scratches resulting from shaping. The perforation is partially cut from both sides to 9mm deep on

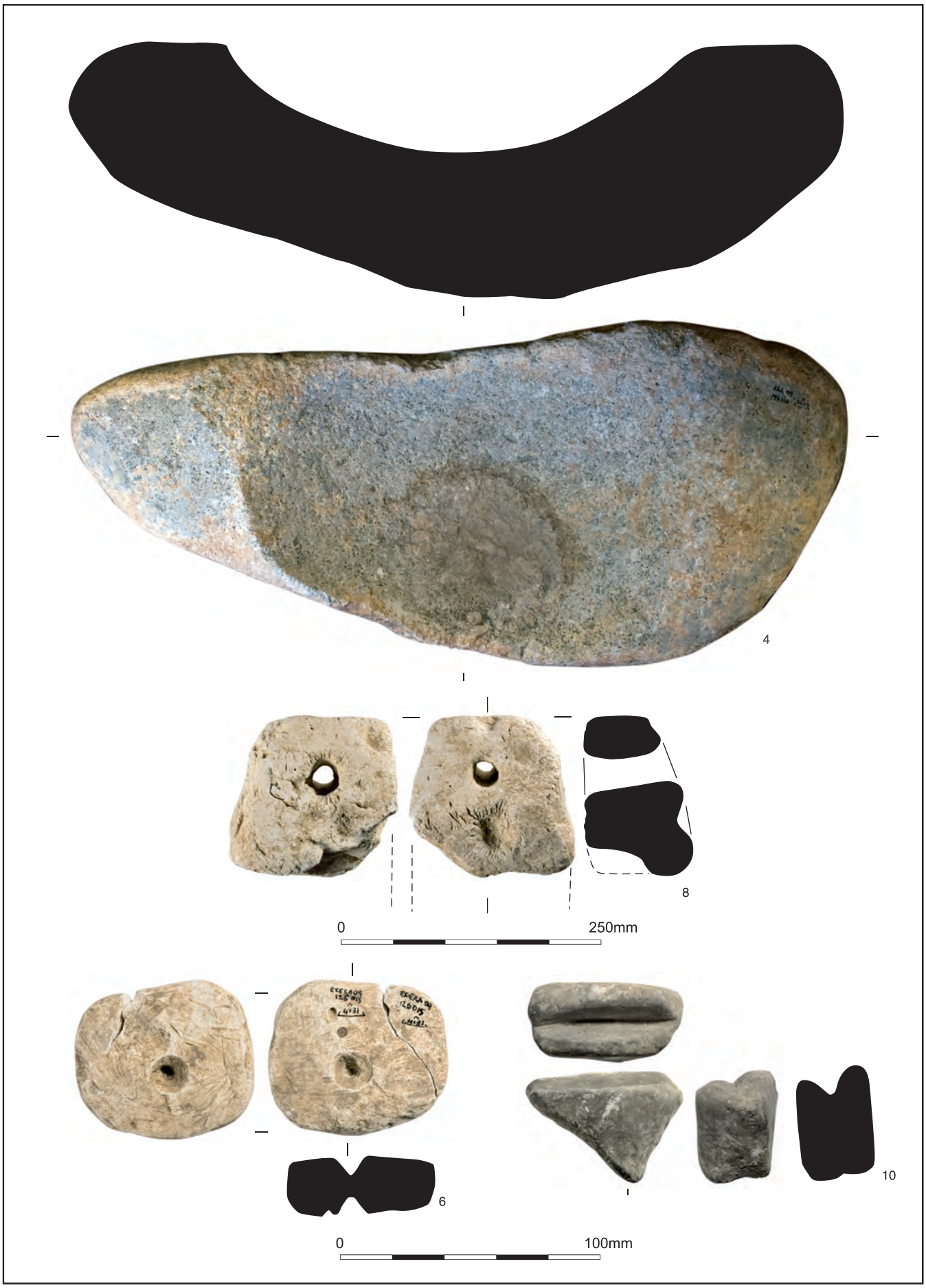


Fig 3.72 Selected later prehistoric worked stone (numbers as in catalogue in Vol 2 Chap 6)

both sides. Measures 57–65mm across x 20mm thick. Weighs 86g. ON 4131. Zone 12. Ctx 126015. Colluvium. Unphased.

8. Oblong weight. Fig 3.72. Chalk. Large oblong weight of which top third / half survives. The perforation is circular with linear scratches on the lower inside edge and sides of the hole from manufacture, whereas the upper surface is smooth. There is no indication of cord wear outside the socket and the wear inside the upper surface of the hole suggests this was suspended on a pole rather than a rope. Only small areas of original external surface survive and these show the weight was reasonably well finished. The opposing face has a hollow formed by similar cuts and scratches indicative of a partially cut hole. Weighs 1716g. ON 1534. Zone 13. Ctx 203067. Tertiary fill of pit 203066. Iron Age.

10. Shaft straightener/grooved stone. Fig 3.72. Very fine grained micaceous grey sandstone. Pebble utilised on one face in a deep V-shaped groove with some wear and scratch marks inside it. Groove measures 10mm wide at the top and 5mm deep. Measures 56mm long. Zone 13. Ctx 211046. Deliberate backfill of pit 211043. Middle Iron Age.

Miscellaneous finds *by Sue Nelson*

Fourteen shale artefacts and one large piece of unworked shale were recovered, 12 from Iron Age contexts in Zones 6 and 13. The majority of these are either broken or unfinished pieces, most of them armlet or bracelet fragments. None of the objects is decorated. One large, complete armlet was recovered from an Early–Middle Iron Age grave (Fig 3.51; Pl 3.21), and most of the shale objects conform to well-paralleled Iron Age and Roman types. The presence of unfinished objects and rough-outs, coupled with the unworked piece, would suggest that shale was being worked in the vicinity.

A range of worked bone artefacts were recovered, many probably associated with textile working, and most from Zone 6. A total of 41 objects which have been assigned a broad late prehistoric/Roman date come from Zone 6, the majority late prehistoric, and it is likely that some of the artefacts from Roman contexts are residual late prehistoric objects. Overall, there are two weaving combs, several gouges and 'points', and a number of other objects which exhibit varying degrees of polish that can probably be attributed to textile production. There are also two pins, a handle, and a pierced canine dog tooth associated with an infant burial (126143) and probably an amulet.

Later prehistoric pottery *by Matt Leivers*

A relatively small quantity of Middle Bronze Age pottery was recovered, most of which consisted of five bucket-shaped jars containing cremation burials. All are flint tempered (fabrics F9–12; for fabric descriptions see Vol 2, Chap 8) with the exception of 12 grog-tempered sherds (fabric G4) and 17 sherds in two rock-tempered fabrics (IG1 and IG2), one from a large jar of Trevisker-type. Complete or near-complete urns came from Zones 6, 12, 21 and 26 (Fig 3.5). One other group of Middle Bronze Age ceramics from ditch 194097 in Zone 10 was of particular interest. This included fragments of a jar with a notched rim, along with 21 sherds weighing derived from two fine ring-stamped bowls. Ring-stamped bowls are not common. Five other examples are known from Thanet, with further examples from at North Shoebury, Essex, Sipson Lane, Middlesex, and possibly Broadstairs, Kent, all in or around the Thames Valley. The Sipson Lane example was dated to 1460–1250 cal BC.

Late Bronze Age material conformed to the types encountered in other local assemblages, being predominantly flint-tempered. The basic division is between high-shouldered short-necked jars with flat-topped rims and concave necks on the one hand, and round-shouldered bowl forms on the other. Bowls are often undecorated, although thin-walled finer examples also occur, some of which are decorated with incised or tooled parallel horizontal lines and (in fewer instances) chevrons. Pottery of this date was widespread; the most interesting assemblages came from Zones 4, 7 and 12.

Diagnostic Earliest Iron Age ceramics were infrequent. In general, fabrics were still flint-tempered (although the flint tends to be finer than in earlier periods), with a smaller proportion of sandy fabrics and a very small amount tempered with grog. The more sizeable groups of sherds occurred in Zones 4 and 7, indicating continuity of occupation, with additional small concentrations in Zones 13 and 26. Forms continued the basic division of coarser jars and finer angular and hemispherical bowls. On the former, decoration consisted of finger pressing on shoulders, necks or cordons; on the latter of tooled or incised lines, often simple horizontal motifs, sometimes chevrons or geometric patterns. Surfaces were often wiped, smoothed or burnished; two bowls from pit 141191 in Zone 4 had a red finish (probably haematite); another from roundhouse 201103 in Zone 7 had tooled line decoration and was also red-finished and was associated with sherds of a finger-pressed cordoned jar.

Early to Middle Iron Age ceramics were current in the 5th and 4th centuries BC. Very large quantities of material of this date were recovered, especially in Zone 13. Fabrics were much more varied than previously, with sand, shell and grog much more prevalent than in earlier periods, and the period was marked particularly by the emergence of mixed-tempered fabrics. While some markedly angular forms are present (particularly in the bowls), the period is characterised by the emergence of convex and round-shouldered profiles on both bowls and jars. Jars tend to be high-shouldered, while bowls tend to have shoulders mid-way up or low on the body. The appearance of pedestal and other elaborations on bases is also typical of the period.

There is no definite chronological division between assemblages dating to the Early to Middle Iron Age and those referred to as Middle Iron Age (4th century or later), although the absolute separation of the two types in features on Zone 13 demonstrates that the two groupings are real. Quartz sand has emerged as the

primary tempering agent, with flint-temper very much less well-represented and other types very much in the minority. Mixed-tempered fabrics continue. Unlike the Early to Middle Iron Age assemblage, the Middle Iron Age material is typified by vessels with angular shoulders (although some round-shouldered forms are present, particularly in the bowls). Jars tend to be high-shouldered, while bowls tend to have shoulders mid-way up or low on the body (although there are exceptions).

Fired clay *by Cynthia Poole*

Late Bronze Age

It is not until the Late Bronze Age that fired clay starts to appear extensively and in any quantity (307 fragments, 2.4kg), though only forming 1.4% of the entire assemblage. The largest concentrations of material were in Zones 4, 6, 7, 12–13 and 19 and the majority was discarded in ditches, with only small quantities in pits, postholes and a well. Much of the material is undiagnostic oven and hearth structure, but there were also small quantities of wattle supported structure, and oven or hearth furniture including oblong pedestals with a single perforation of Late Bronze Age type. A fragment of triangular perforated brick of Iron Age type in a Bronze Age ring-ditch (134096) was presumably incorporated in the fill accumulating in the upper levels of the ditch during the Iron Age.

Evidence for salt working activity appears to have its origins in the Late Bronze Age, with a scatter of small fragments found in ditches comprising salt working hearth structure from Zones 6 and 19 and a pinch prop from Zone 7. A slightly larger group from Zone 4 was found in an oblong pit 254140, which measured 0.7 by 0.4m and 0.47m deep, a size suitable for an evaporating hearth. The fired clay consisted largely of hearth structure, a flat slab fragment with part of a straight edge, possibly a piece of hearth furniture and a single curving fragment that may be a vessel sherd.

Early–Middle Iron Age

During the Early Iron Age fired clay occurred in very low quantities (33 fragments, 1.63kg) confined to Zones 4, 6, 7, 12, 13 and 26, with just a few small fragments recovered from most areas. This included small fragments of perforated oven plate, pedestal and indeterminate oven or hearth structure. From the cobbled surface 126275 in Zone 6 came fragments of salt working hearth structure and an unusual squat clay disc apparently cut from a lump of unwedged clay (Vol 2, Chap 12, Fig 12.7,30). A larger quantity of material was recovered from Zone 13, all of it from the ditch (134099) of the trapezoidal enclosure, and comprised almost entirely wattle supported oven structure including some with salt discolouration and a small curved fragment probably from a pedestal.

By the Early–Middle and Middle Iron Age quantities of fired clay increased dramatically (1130 fragments, 51.75kg) forming respectively 20% and 10% by weight (11% and 5% by count) of the entire assemblage. Fired clay was broadly concentrated in the same areas as previously but its distribution expanded to include areas peripheral to the main foci of Zones 6 and 12–13. During the earlier phase a small group was found in Zone 3 and scattered small fragments in Zones 10, 11 and 19, and in the later phase two individual groups were found in Zone 4 and 5. The fired clay comprised a wide range of oven and hearth structure, including hearth and oven floor, oven wall, and wattle supported panels. Portable oven and hearth furniture included pedestals, triangular oven bricks, firebars, oven plates, discs and hand squeezed lumps. Quantities of briquetage vessels together with salt-related hearth structure and furniture also increased and spread over a much wider area.

Although the majority of fired clay was found in ditches and pits as in previous periods, smaller quantities occurred in a wide variety of features. The fragments of oven structure and remains found during this period suggest that a range of structures are represented. At their simplest the standard domestic oven was probably a circular single-chamber structure with floors, walls and dome constructed as a single continuous solid structure. Such structures would be built at floor level or possibly even on a raised plinth, accounting for the sparse evidence for *in situ* ovens. There is also material that indicates structures of a semi-enclosed character with a lower chamber or flue, where the fire was situated, covered by a suspended floor formed of a panel of clay supported on wattles or timbers. The degree of firing can be variable, often with one much better fired surface grading to a poorly baked or unfired back. The character of firing suggests low temperature activity, which may relate to crop and food processing. This type of structure may have been rectangular or linear rather than circular. The sparse evidence for *in situ* ovens may indicate that any lower chamber was only partly subsurface and cut only into superficial deposits, not the natural bedrock.

During the Middle Iron Age salt production became more prevalent, with a noticeable increase in the quantity of material and evidence for production concentrated in Zones 6 and 13, but with material also extending into Zones 4–5, 7, 10 and 12 and a single small fragment of possible hearth structure in Zone 22. The activity is small scale, probably of cottage industry type, characterised by cylindrical evaporating vessels and rounded vessels with everted rims, tongue-shaped clips to secure adjacent vessels during the evaporating process and the use of triangular perforated oven bricks as pedestals to support vessels or possibly a plate on which vessels were placed. Structural fired clay is associated with the briquetage, but it gives little clue to the nature of the hearths used in the evaporation process. The absence of *in situ* structures suggests that no subsurface element was involved and that domestic style hearths and equipment were used, especially in view of the use of perforated triangular bricks as pedestals, which are ubiquitous on all Iron Age sites and presumably normally functioned in association with domestic ovens and hearths, though specialised use in relation to pottery production has been noted at Dagenham (Poole 2010a).

Pl 3.42 Early–Middle Iron Age triangular oven bricks (Zone 13)

Triangular perforated bricks formed a distinctive element of the assemblage and there is unequivocal evidence from discolouration resulting from association with salt production (Pl 3.42; see also Vol 2, Fig 12.6, 18) that these objects were used as oven or hearth furniture and not as loomweights. They frequently occurred in association with oven or hearth structures: 18 out of 22 features producing triangular bricks in the Middle Iron Age also produced other oven or hearth furniture, though in a few cases in only very small quantities. The three largest groups of triangular bricks produced no other fired clay material in two instances (130032, 277042), and very little oven or hearth structure in the third (256029), which may indicate that sets of bricks were discarded once too damaged to remain in use whilst the oven or hearth continued to function. However, there are examples in these three groups of both complete undamaged bricks and others that had continued to be used after one or two corners had broken off, so they may have been deliberately selected for deposition as a structured deposit in the pits.

The group in pit 130032 was associated with low densities of carbonised plant remains from the lower layer (130034) and a scatter of burnt flint throughout the pit fill. The deposit of triangular bricks (ONs 513–524, Fig 12.6, 12–14, 16–17, 21) had been placed in the upper layer (130033) in the south-west half of the pit (Vol 2, Pl 12.1). They appeared to be deliberately laid flat on their triangular face, some edge to edge or on top of each other. Though the pit does not appear to have been an oven base in that no *in situ* burning was visible, the manner in which the bricks were laid may reflect the way such objects were placed to form a hearth base or stacked to form a support or wall. The pattern of firing on one triangular brick from pit 256029 suggests that it had been laid flat on top of another triangular brick with a third set on edge on top of it. The presence of decoration on two, a triskele pattern on one from pit 130032 (Vol 2, Fig 12.6, 15) and a cross from pit 256029 (Vol 2, Fig 12.6, 19), may indicate their use to create a hearth surface, as hearths are the structures which most commonly exhibit decoration.

A large group of fired clay from the ditch (134099) of the trapezoidal enclosure in Zone 13 included evidence for salt working comprising hearth structure, furniture including a fragment of perforated plate and a firebar, and seven briquetage vessel sherds from a cylindrical vessel 80mm in diameter and a curved vessel with a rounded everted rim *c* 150mm in diameter. All are thin walled, measuring 5–8mm thick. Other fired clay not specifically identified as associated with salt working included oven structure comprising oven wall, hearth floor, several pieces of wattle supported panel, and a perforated fragment with cindered surface interpreted as furnace lining. Furniture included fragments of a tapered firebar with triangular cross-section, part of a flat slab (possibly a suspended floor, with a suggestion of luting to attach it to the oven or hearth structure) and possible pedestal fragments with a curving surface indicative of a diameter of 80mm. A few of these pieces had small patches discoloured pink or purplish, but insufficient to be designated as salt working material on this basis alone. However, in view of the concentration of briquetage in this ditch it suggests the other fired clay may also have been used for salt working. The scale of salt production is small and is likely to represent production by individual households in a domestic setting, possibly using a domestic oven or hearth structures rather than specialised single-purpose structures.

Although much of the fired clay occurred in small quantities scattered through a range of features, a number of groups stand out either as isolated groups within a zone or as more substantial groups within the larger zone assemblages. From Zone 3 a small group of broken oven furniture comprising parts of cylindrical pedestals and a triangular brick was found in a shallow oblong hollow (151001). The single group from Zone 4 found in a shallow oval pit (182246) consisted of oven/hearth structure and was associated with carbonised cereal grain and chaff. The main concentration in Zone 5 was found in the top of pit 254114 and consisted of oven structure, including wattle reinforced structure, and fragments of pedestals and firebar. It is possible in all these cases that the pit or hollow in the top of the infilled pit served as an oven or hearth base.

In Zone 12 the majority of the fired clay was concentrated in five postholes (137101, 145049, 154024, 154029 and 154032) and consisted predominantly of oven and hearth structure, including wattle reinforced panels, oven wall and oven plate and a fragment of triangular brick. The material from postholes 154029 and 154032 was clearly from the same source together with pieces in the fill (154035) of a Late Iron Age ditch (190176). Another posthole (154028) of general Iron Age date containing triangular brick and oven wall also appears to be related to this group.

Much of the fired clay in Zone 6 comprised small and scattered fragments, and apart from the pits (256029, 277042) containing triangular perforated bricks (above) only one pit (244292) contained a significant quantity that included oven/hearth structure and floor, wattle supported panels and sherds of briquetage. In Zone 13 in addition to the groups of triangular perforated bricks in pit 130032, there were several other large groups of

fired clay concentrated in pits. These included oven wall and plate in 125053, and oven floor, wall, lining and triangular brick in 168135. The greatest range of material came from the ditch of the trapezoidal enclosure (134099), comprising oven/hearth structure including floor and wall, wattle supported panels, vitrified lining, possible pedestal and firebar, and briquetage vessels

Human bone by Jacqueline I McKinley

The later prehistoric inhumed and cremated bone are summarised in Tables 3.7–8 (Appendix 1); further details may be found in Volume 2, Chap 13.

Animal bone by Lena Strid

The species present in the Late Bronze Age to Middle Iron Age assemblages include cattle, sheep/goat, pig, horse, donkey, dog, red deer, small cetacean, domestic fowl, raven, crow, diver, mole, frog and toad. Cattle is the most numerous animal present, although sheep/goat is predominant if quantification is based on the Minimum Number of Individuals. This discrepancy could be caused by easier identification of the smaller sheep/goat bone fragments, or by a genuine predominance of sheep/goat in the living assemblage. Regardless, cattle would have been the main meat provider due to its larger size. Other animals that contributed to the diet include pig, horse, domestic fowl, red deer and possibly also small cetacean. A cut mark on a dog scapula suggests the occasional utilisation of dog flesh, whether for dietary, medicinal or ritual purposes.

Viewing the Early Iron Age and Middle Iron Age assemblages as a whole, the Cliffsend spur (Landscape 2) shows a higher frequency of cattle and lower frequency of pig compared to the Ebbsfleet peninsula (Landscape 3). Perhaps the inhabitants of the settlement in Zone 6 increased the arable land at the cost of woodland suitable for pannage during this period.

Cattle and sheep/goat were kept for a multitude of products. Surplus cattle were killed in their first or second year, while the rest of the herd were kept to adult age or longer as dairy producers, breeding animals and draught animals. Sheep/goat show a similar slaughter pattern, where young animals were killed for meat in their first year and the others were kept for their milk or wool for some more years. The epiphyseal fusion data suggest that a majority of the sheep died skeletally immature, before 3.5 years of age. However, the dental data from Zone 13 include a 6–8 year old sheep/goat. Pigs were usually slaughtered as subadults. A small number of older pigs, probably breeding animals, were also present. The presence of juvenile bones from cattle, sheep/goat and pig shows that breeding took place near or on the site.

Female cattle dominate the assemblage, suggesting that in the Early Iron Age in particular cattle husbandry was focused on dairy products rather than using cattle as draught animals for agriculture. Nevertheless, pathologies indicative of the use of animals for traction were found on several cattle bones.

One probable Middle Iron Age equid metatarsal in Zone 13 was metrically identified as donkey. Donkeys were used by the Romans as pack animals, but they are very rarely found in Britain. Other identifications of donkey include four remains from Iron Age sites, among those Danebury, and two Roman finds from London and Hadrian's Wall respectively (see Vol 2, Strid, Chap 14). The presence of donkey on the EKA2 shows trade connections to the Continent long before the Roman invasion.

Other early introductions include three bones from domestic fowl (which have all been radiocarbon dated – see Barclay, above), all found in Middle Iron Age features. These are some of the earliest finds of domestic fowl in Britain, together with fowl bones from the Early Iron Age sites of Houghton Down (Hamilton 2000) and Blackhorse Road (Legge *et al* 1989).

Several animal bone groups were recorded in the Late Bronze Age to Middle Iron Age assemblages. Most noteworthy is the burial of a horse in a pit in Zone 13, radiocarbon dated to the Middle Iron Age (see above), and lying within 20m or so of the entrance to the trapezoidal enclosure. There is also a horse skull, a partial raven skeleton and a dog penis bone, as well as a cattle skull and a pair of pig mandibles associated with two inhumation burials. Deposits interpreted as possibly ritual comprise one hind limb of horse, two articulated cattle mandibles and one articulated sheep/goat mandible.

Marine shell by Rebecca Nicholson

Shells were relatively scarce in later prehistoric contexts, and were mainly mussel with oysters also present in several deposits. Even considering the low numbers, however, it is evident that shellfish were eaten, although they were probably no more than an occasional foodstuff.

Several fills within Bronze Age ring-ditch 134096 (Zone 13 on Foads Hill) contained significant caches of mussel (*Mytilus edulis*) valves, with occasional examples of common periwinkle (*Littorina litoralis*), small cockle (*Cerastoderma* cf *edule*) and a topshell (*Gibbula umbilicalis*) probably representing incidental inclusions with the mussels possibly imported with seaweed. Since these were found in secondary fills it is unlikely that the shells have any special significance in relation to the construction and use of the monument. By contrast, a layer of shell, including a minimum of 13 oysters (*Ostrea edulis*) and two limpets (*Patella* cf *vulgata*) lay in the base of cut 148040 at the terminal of Middle Bronze Age gully 148044 in Zone12. This may possibly relate to food consumed at the time of construction.

Possible Late Bronze Age/Early Iron Age pit 157012 (Zone 10, at the base of Sevenscore scarp) contained the remains of a minimum of 25 oysters and two mussels. Shells from contexts securely dated to the Iron Age were similarly rare, since many features dated to the Iron Age and containing shell included some Roman or later pottery in the fills. When present, oyster shells were

poorly preserved and of variable shape and size, suggestive of harvesting from a natural bed. Four whelk shells (*Buccinium undatum*) and six red whelk shells (*Neptunea antiqua*) were recovered, mostly from pit fill 178071 in Zone 14. Marine shell is extremely common in mid-Saxon deposits across Zone 14, so it is possible that the shell from 178071 is intrusive (see Chap 5, below, and Vol 2, Chap 16).

Plant macrofossils *by Kath Hunter and Rebecca Nicholson*

The charred plant assemblages dating from the Middle–Late Bronze Age to the Middle–Late Iron Age were fully recorded. Twelve analysed samples were dated to the Middle–Late Bronze Age (Vol 2, Table 17.2), 12 to the Early–Middle Iron Age and 11 to the Middle–Late Iron Age. The assemblages are generally richer than those from the Early Neolithic samples (see Chap 2), but are still relatively sparse compared with those from the Late Iron Age and Roman phases, which is characteristic of samples from this period.

Middle–Late Bronze Age

Most of the Bronze Age samples produced relatively small assemblages of charred cereals and associated chaff. Glume wheats including emmer (*Triticum dicoccum*) and spelt (*Triticum spelta*) are present in greater quantities than in the earlier prehistoric phase, as is barley (*Hordeum* sp.). Both hulled (*Hordeum vulgare*) and naked varieties of barley were recovered (Vol 2, Pl 17.2). Naked barley (*Hordeum vulgare* var. *nudum*) is a crop that seems to go out of use at the end of the Late Bronze Age, whilst the hulled varieties have continued in cultivation to the present day. A particularly well-preserved deposit of naked barley was found together with hulled barley and emmer grains in pit 159256 from Zone 7 on Cottington Hill. This has been radiocarbon dated to the Late Bronze Age (2680±35 BP, 910–790 cal BC, SUERC-40740;2770 ±35 BP, 1010–830 cal BC, SUERC-40741). The lack of barley chaff may be an indication of the deposition of a processed grain, although the chaff could have been lost during the charring process. Possible naked barley grains have also been identified at the nearby Thanet Earth excavations, from a potential Neolithic context, which suggests a continuity of use through the Neolithic and Bronze Age periods (Carruthers 2012). The extremely well-preserved nature of the naked barley assemblage from the EKA2, together with an absence of associated chaff, suggests that the assemblage from pit 159256 might be a primary deposit. Broad/Celtic bean (*Vicia faba*) was found in characteristically small quantities in the analysed samples, providing evidence of another Late Bronze Age food crop.

Early–Middle Iron Age

The Early Iron Age assemblages introduce a further food crop with pea (*Pisum sativum*) joining the broad/Celtic bean. There were no further grains of naked barley identified, but hulled type grains continue to be represented. There appears to be a marked increase in the quantities of glume wheat grains and chaff present in the samples, when compared with earlier ones, with both emmer (*Triticum dicoccum*) and spelt (*Triticum spelta*) represented particularly in the zones on the Ebbsfleet peninsula. Evidence of flax cultivation continues on the Ebbsfleet peninsula and the Cliffsend spur. With the exception of sample 8204 from pit 312011 (Zone 4), wheat was the major cereal represented in all of the samples from the Early–Middle Iron Age, with the majority of chaff identified as spelt, while emmer and a few free threshing wheat rachis fragments occur in features from Zone 13. All of the identifiable barley (*Hordeum* sp.) grain is of a hulled type, with some rachis fragments and lemma bases suggestive of the presence of a six row type in sample 7904 (a fill within pit 173275, Zone 6). Oats were present in most samples, and were frequent in sample 7904, although whether of the wild (*Avena fatua*) or cultivated (*Avena sativa*) type is unclear. Flax seeds were also recovered from sample 7904, and from sample 5506 (pit 191066, Zone 13), indicating the continued cultivation of this crop, for oil and/or fibre. Together with legume seeds, a single charred *Sitona lineatus* (sitona weevil) was also found in sample 7904 (identified by H. Kenward). This is an insect commonly found associated with vetches and peas, although it can be found outside this habitat type.

A relatively large deposit of what appears to be narrow leaved pepperwort (cf *Lepidium ruderales*) from sample 7904 might be evidence of an Early Iron Age crop weed, although it is possible that the seeds were collected for oil extraction. A single seed of this type along with one from penny cress (*Thlapsi arvense*) and broad fruited corn salad (*Valerianella* cf *rimosa*) were mineralised. Henbane (*Hyoscyanus nigra*), a toxic plant often associated with nitrogen-rich deposits such as middens, is also present in sample 7904 as charred seeds. A large number of similar seeds were recovered from early Roman sample 7602 (see Chap 4). Another possibly significant weed is *Lithospermum arvense* (corn gromwell) which produces seed of a similar size to cereal grains and these might be retained through the cereal processing stages. The achenes are toxic and have a very high silica content, so if they were not removed by hand before milling they might have proved a potential health risk and they could have resulted in a very gritty flour. A number of samples from Zone 13 contained relatively large numbers of these seeds, in particular sample 5501 (pit 191054), suggesting that there was a significant infestation of the local crops. Corn gromwell is today a typical weed of spring-sown cereals, found growing in light, chalk-rich soils, suggesting that crops were grown locally, for example on the chalk ridge. Sloe stones (*Prunus* cf *spinosa*) also in sample 7904 may represent a foodstuff.

Sample 7903, a fill within pit 173275, was not fully recorded, but the assessment records 'cessy' concretions containing silicified and charred cereal chaff and wheat and oat grains, together with charred legumes, a charred damson-type fruit stone and weeds seeds including scentless mayweed *Tripleurospermum inodorum* and wild radish *Raphanus raphanistrum* (Hunter unpublished);

given the concretions, it can be suggested that this feature contained a faecal component in its backfill.

Middle Iron Age sample 8249, from Zone 4 pit fill context 182248, included abundant cereal grains including both emmer and spelt wheat, oats and occasional hulled barley. The wheat from this sample was relatively well preserved, and where the wheat chaff is identifiable it is dominated by spelt wheat with some emmer and a possible rye rachis fragment. It is, however, possible that the rye could be intrusive as it is more commonly associated with medieval and later deposits. A single identifiable broad bean seed and a number of large legume type seed and pod fragments were recorded, but unfortunately the majority were not sufficiently well preserved to identify them further. As in the Late Bronze Age–Early Iron Age, the weed seeds, including scentless mayweed, indicate cultivation on lighter soils, probably those located on the chalk.

An upper fill of Middle–Late Iron Age oven 280119 (sample 8201) from Zone 4 produced a rich deposit of charred cereal remains. It appears that wheat grains (where fully identified from spelt) were still in part encased within their spikelet when they were burnt, which is suggested by the presence of double wheat grains adhering together. Unfortunately all the diagnostic chaff has been burnt away. Most of the surviving chaff in the sample is the silica-rich lemma, palea and glume beak fragments. None of the grains show any evidence of the insect damage, sprouting or collapse which might suggest the destruction of a spoilt batch of wheat. So it is possible that the sample represents a crop of wheat still encased, in-part, within its glumes that was burnt accidentally whilst it was being dried prior to storage or being parched prior to it being pounded to release the naked grain. Oats, mostly sprouted grain, was also frequent in the cereal assemblage, although in the absence of floret base fragments it is uncertain whether the oats was the wild or cultivated form. The peas and hulled barley also present could also have been from the accidental burning of crops being dried or they all could be part of a deposit of waste material that was deliberately burnt.

Seeds of scentless mayweed (*Tripleurospermum inodorum*) from most samples, including sample 8301 – the upper fill of Middle–Late Iron Age pit 254114 in Zone 5 – which also included seeds of corn spurry (*Spergula arvensis*) and sheep's sorrel (*Rumex acetosella*), indicates the utilisation of sandy acidic soil, possibly the Thanet Sands of the Ebbsfleet peninsula. However, the cultivation of heavier more clay-rich soils may also be hinted at by occasional stinking chamomile (*Athemis cotula*) seeds from a few samples, as well as by the increasing cultivation of spelt.

Charcoal *by Denise Druce*

All of the Late Bronze Age assemblages from the EKA2 were cremation deposits from cremation cemetery 252229 in Zone 4. Ten of the twelve cremation deposits included identifiable charcoal (Vol 2, Table 18.2); most were collected as single whole-earth samples, but 252214 and 220142 comprised two samples each. Only two of the excavated features have been confirmed as graves (252215 contains the remains of an adult, possibly female, while 252223 contains the remains of an infant, 1–4 years old); the other deposits all comprised charcoal-rich fills but very small quantities of cremated bone and are, therefore, likely to represent redeposited pyre debris (Tables 3.7 and 3.8, Appendix 1). Since there were no duplicate skeletal elements between these eight deposits and those recovered from the remains of the two burials, all the bone could have derived from the same two cremations. A comparison of the charcoal data suggests that the largest assemblages (>100 fragments) (from 252214/sample 8214, 252218, 252220) appeared to also contain larger sized charcoal fragments, which, notwithstanding post-depositional processes, may suggest that a higher proportion of the pyre debris was collected and redeposited in these contexts. Of these, 252218 and 252220 contained infant bone and 252214 bone from a subadult/adult >13 years old.

The cremation assemblages were all dominated by oak charcoal, with rare cf elm, blackthorn-type and buckthorn, and rare/frequent ash. The common occurrence of oak fragments with tyloses in 252218 and 252214 suggests that part of the pyres for these two cremations were constructed out of mature oak trees. The non-oak taxa are likely to represent brushwood/kindling and/or pyre goods.

The two Early–Middle Iron Age assemblages were from pit fills (Vol 2, Table 18.1). One, 211046, a charred deposit lining the base of pit 211043 (Zone 13) was dominated by oak, and the other, 173281, a fill within pit 173275 (Zone 6), was dominated by hazel. The limited evidence suggests that oak was still available locally and utilised as wood fuel during this period. However, the presence of ash, a light demanding tree, hawthorn-type, and blackthorn-type, indicates open/scrubby areas and/or hedgerows.

The abundant charred remains of stems/straw and rhizomes accompanying the hazel charcoal in pit fill 173281 are potentially interesting, and may represent burnt household/stable waste. Indeed the inclusion of charred amorphous 'lumps' in the deposit may very likely be the remains of livestock dung. Both prehistoric and historic evidence for leaf and twig foddering through the winter months, when livestock tends to be housed, is well attested. The process involves either the cutting/storing of leaf-bearing twigs during the summer or the cutting of fresh twigs (with or without new growth) in late winter or early spring (Hass *et al* 1998). Although documented use of hazel as fodder appears limited (Edlin 1949), as is unequivocal evidence for foddering from British prehistoric sites (though this appears to be being addressed), there is no reason to suggest that hazel was not used; even, perhaps, as a by-product of coppicing or pollarding.

Chapter 4

Conquest and Change: the later Iron Age and Roman Period

by Paul Booth, Kate Brady, Oliver Good, Matt Leivers, John Powell and Gerry Thacker

Introduction

Activity of the Roman period was widespread across the EKA2 (for a general location of the principal components see Fig 4.119), but there was considerable variation in its character and chronological range in the different component areas. Aspects of chronology are outlined below, followed by a zone by zone description of the Late Iron Age and Roman phases of activity where this is present. The description is of a fairly condensed nature and is site-specific. Selective wider ranging discussion treats the Late Iron Age and Roman evidence thematically and is followed by short summaries of all the relevant classes of artefactual and environmental evidence prepared by the relevant specialist contributors.

Chronology

The chronology of the Late Iron Age and Roman periods of activity within the project area is based initially upon stratigraphic sequences, where present (as for example in Zone 6), given definition by the evidence of pottery, coins and, occasionally, other artefact types. Pottery is inevitably the principal dating tool because of its relative abundance, but despite the latter characteristic close dating of pottery was often not possible. Issues of ceramic chronology are discussed in more detail elsewhere (Vol 2, Seager Smith, Chap 9) but throughout the project area problems were caused by the small size of some assemblages and an absence of chronologically diagnostic pieces in both these and, in some cases, in larger groups as well. Few of the principal coarse ware fabrics of the Roman period had closely-defined date ranges, so dating on the basis of fabrics alone inevitably resulted in the assignment of wide ranges. The grog-tempered fabrics, which together formed about 35% of the entire assemblage (by sherd count, approximately 38% by weight), are a particularly clear example of this problem.

The coin evidence was also relatively limited – in this case generally in terms of quantity. In total 118 Roman coins were recovered, of which 89 came from Zone 6, the only area to produce a useful assemblage. The Iron Age coins, discussed in greater detail above (see Chap 3), again most numerous in Zone 6 (46 of the 53 Iron Age coins from the EKA2 came from Zone 6 and closely adjacent Zones 4 and 7, supplementing a previously identified focus of material (Holman 2005, 16–18)), may suggest continued activity there through the 1st century BC and the first half of the 1st century AD. However, the great majority are potins for which the later date is not appropriate, so on the basis of the coinage, at least, mid-1st century BC to early 1st century AD activity was at a relatively low level compared to the previous period (for more detailed discussions of the Zone 6 Iron Age coinage see Fitzpatrick above (Chap 3) and Cooke and Holman (Vol 2, Chap 1)). The significance of two Claudian coins in Zone 6 is uncertain; it might be suggestive of activity from around the time of the Claudian conquest, but this is unclear. A sequence of coins from the Flavian period onwards indicates occupation here throughout most of the Roman period, but with hints of a reduction in the scale of activity in the later 3rd century (see below). Thereafter significant and characteristic peaks of 4th century coin loss were evident, and coins of the latest period of regular use in Britain (AD 388–402) were also present.

Elsewhere, numbers of coins are strictly limited. Coins of generally early date (broadly 1st–2nd century) occur on five sites, but are single pieces in all but one instance (discounting a small mid-2nd century silver hoard from Zone 7). Coins of later 3rd–4th century date are both more numerous and more widespread (occurring in eight zones as well as Zone 6), but even so the total is unimpressive, amounting to a mere 15 coins. The greater frequency of later coins is of course consistent with a national trend and does not indicate increased activity at this time. The latest coins in these small groups are issues of the House of Valentinian (AD 364–378); coins dated AD 388–402 are, unsurprisingly, absent. A comparison with the pottery evidence is instructive: material from contexts assigned specifically to the later Roman period (*c* AD 250–400) amounts to just 3.7% of both the total sherds and weight of pottery dated to the Late Iron Age–early Roman and subsequent Roman phases. Moreover, 98% of these sherds derived from Zones 6 and 20. These were fairly clearly the only locations of significant later Roman activity within the project area, even allowing for the fact that some late Roman pottery, not specifically identifiable as such, might have been contained amongst the material only categorised as broadly 'Roman' in date, both in these zones and elsewhere.

The broad chronological trend across the various Zones of the EKA2 project seems, in the areas of most

Table 4.1 Quantification (number of sherds/weight in grammes) of the later prehistoric and Roman pottery by sherd date and Zone. Suggested main concentrations of activity are shown in bold. Mean weight shown to the nearest whole gramme

Zone	*Data*	*Middle/Late Iron Age c 200–100/80 BC*	*Late Iron Age c 1st BC*	*Iron Age c 7th–1st BC*	*Late Iron Age/ Early Roman c 1st to c AD 70*	*Early Roman c AD 70–120/30*	*Middle Roman c AD 120/30–250*	*Late Roman c AD 250–400+*	*Roman c 1st–4th AD*	*Total*	*Mean wt.*
1	No.	23	2	10	10	4	5	1	47	102	9
	Wt.	262	58	48	128	19	22	2	383	922	
2	No.	8	53	3					6	70	6
	Wt.	26	356	5					20	407	
3	No.	13	43	24	29	5			49	163	9
	Wt.	183	469	83	229	184			372	1520	
4	No.	**676**	60	20	78	40	21		31	926	10
	Wt.	**6586**	480	57	934	670	230		368	9325	
5	No.	14			1				4	19	4
	Wt.	68			5				10	83	
6	No.	**3695**	**1034**	4508	**4724**	**3356**	**3337**	**547**	2728	23929	13
	Wt.	**47079**	**12285**	45896	**58285**	**50199**	**53413**	**7994**	41932	317083	
7	No.	**1239**	236	15	104	62	97		221	1974	11
	Wt.	**10735**	2514	131	887	1048	3268		3844	22427	
8	No.	5	10	31	3	9	56		23	137	13
	Wt.	14	41	416	15	49	954		352	1841	
9	No.	5	3	19	3		9			39	12
	Wt.	85	8	230	11		148			482	
10	No.	**654**	**218**	27	**689**	**1034**	32	6	869	3529	16
	Wt.	**4748**	**2551**	103	**9865**	**17260**	4416	784	16793	56520	
11	No.	**338**	92	8	**556**	**467**	**479**		1458	3398	13
	Wt.	**2462**	667	15	**7065**	**6389**	**7613**		19941	44152	
12	No.	**753**	161	5	128	86	48	7	81	1269	11
	Wt.	**6529**	1027	25	1169	721	2230	223	2179	14103	
13	No.	259	**1120**	215	**1088**	**2590**	2		154	5428	17
	Wt.	3420	**23345**	1862	**13244**	**48137**	14		2197	92219	
14	No.	79	12	22	12	11	5	1	128	270	12
	Wt.	434	43	168	182	78	57	36	2185	3183	
15	No.			6						6	4
	Wt.			24						24	
17	No.	6	8		3					17	16
	Wt.	40	167		64					271	
18	No.	7	35			1	1		1	45	5
	Wt.	12	220			9	1		1	243	
19	No.	**524**	45	8	**726**	**202**	**356**	7	543	2411	15
	Wt.	**4270**	546	68	**8278**	**3344**	**6285**	125	13168	36084	
20	No.	17	3	1	24	**304**	**3706**	**712**	1787	6554	15
	Wt.	272	26	28	229	**4841**	**56424**	**10168**	28386	100374	
21	No.	70	3	16	4	6	94		72	265	10
	Wt.	256	11	106	32	66	1465		739	2675	
22	No.	65		1	3	50			15	134	8
	Wt.	667		8	5	337			68	1085	
23	No.	136	89			**299***	1		42	567	6
	Wt.	1166	596			**1233**	29		268	3292	
24	No.								1	1	-
	Wt.								3	3	
26	No.	99	10		40				4	153	3
	Wt.	264	130		103				10	507	
29	No.				5	41	69	2	113	230	17
	Wt.				38	1201	1160	65	1503	3967	
unass	No.	31	1	4					6	42	16
	Wt.	414	168	16					61	659	
Total no.		8716	3238	4943	8230	8567	8318	1283	8380	51675	
Total wt.		89992	45708	49289	100768	135785	137729	19397	134624	713292	
Mean wt.		10	14	10	12	16	17	15	16	14	

*Almost all one vessel

significant occupation (as represented by finds rather than 'structures'), to be of continuity of activity through the Middle to Late Iron Age and into the early and middle Roman periods. This is not an invariable rule, however, and activity through the Late Iron Age cannot be assumed simply on the basis of the presence of material (essentially pottery) of Middle/Late Iron Age date on the one hand and Late Iron Age/early Roman date on the other. As has been suggested above in the specific case of Zone 6, a hiatus (or at least a significant diminution of activity) in the occupation sequence in the later 1st century BC may be suspected. Such a break could perhaps have occurred elsewhere, but might have been very difficult to detect in the absence of prominent features drawing attention to the possibility of interrupted sequences.

Overall quantities of pottery assigned to Late Iron Age/early Roman, early Roman and middle Roman phases are broadly similar (for a summary see Table 4.1), but since the date range of the middle Roman period (*c* AD 120/30–250) is about twice as long as those of the two earlier phases a reduction in the volume of pottery deposition is therefore already evident at this time. A corresponding reduction in the intensity of settlement activity may thus be suspected, although possible developments such as changes in patterns of rubbish disposal also have to be borne in mind.

Two simple assumptions underlie this outline. The first is that concentrations of finds such as pottery and animal bone are closely correlated with the location of areas of relatively intensive activity, and particularly of domestic settlement. The second is that a reduction in the number of occupied sites reflects contraction of the overall settlement pattern of the surrounding area. While plausible, neither of these assumptions is necessarily correct; these issues are discussed further below.

The principal sites

Zones 1, 2 and 3

Late Iron Age–early Roman

At the southern end of the Ebbsfleet peninsula Roman activity was limited to a pair of relatively large and somewhat irregular, east-west ditches (172210 and 172211) in Zone 1 (Fig 4.1). Together these were up to 2m across and approximately 0.7m deep. Although ditch 172210 cut ditch 172211 the two features are thought to have been broadly contemporary and represent the continued use of a boundary. Towards the south-eastern edge of the excavated area the two ditches converged and became one broad, shallow feature. The finds from the ditches included abraded Roman pottery and small quantities of marine shell and residual worked flint. A few sherds of Roman pottery were also recovered from probable medieval ditches located 8m to the north and south of ditches 172210 and 172211.

Further north on the peninsula Late Iron Age pottery was recorded in small quantities from a number of features across Zone 3, but only four features have been assigned to the Late Iron Age, and their use may have extended into the Roman period. The features were located in the southern half of the zone and comprise circular drip gully 172034 and three shallow ditches or gullies (138008, 172019 and 172021).

Ditch 172021 was one of a series of shallow ditches (most undated) aligned NE–SW and it may have been the earliest of the Late Iron Age–early Roman features in the area. It also produced the largest assemblage of Iron Age pottery (38 sherds) from any feature within Zone 3, with virtually all from the eastern end of the ditch closest to drip gully 172034. Circular drip gully 172034, dated to the Late Iron Age to early Roman period, lay approximately 7m to the north of ditch 172071. The

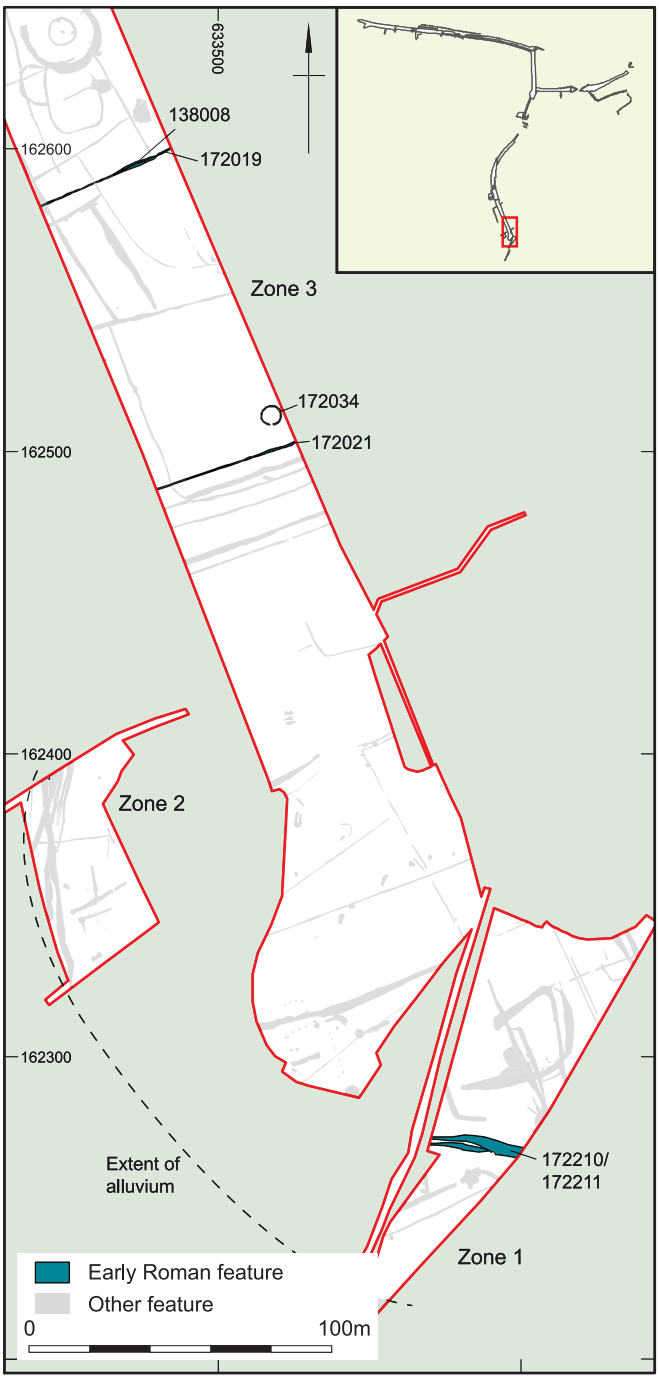


Fig 4.1 Plan of Late Iron Age and Roman features (Zones 1, 2 and 3)

gully measured 6m in diameter and was shallow, with a maximum depth of 0.12m; a gap in the south side is likely to be a result of truncation, rather than the location of an entrance.

Two intercutting ditches (138008 and 172019) lay approximately 100m to the north-west of ditch 172021, on broadly the same alignment, and contained Late Iron Age–early Roman pottery. The ditches possibly defined the northern extent of an enclosure bounded by ditch 172021 to the south and containing circular structure 172034, which on the basis of its size perhaps served an agricultural rather than domestic function.

Ditches 172210 and 172211 and the residual pottery indicate that there was settlement during the Roman period towards the southern end of the Ebbsfleet Peninsula. However, there are few securely dated features and the activity in Zone 1 was probably at the periphery of any settlement, which may have been located towards the western side of the peninsula, perhaps closer to the Roman circular structure recorded in Zone 3, or possibly further to the north in Zones 4–6.

Zones 4, 5 and Weatherlees Pond

Early Roman

The large Middle to Late Iron Age ditch 190288 (see Chap 3; Fig 4.2) was recut along the southern edge by two Roman ditches, 190289 and 190290. Both ditches had irregular V-shaped profiles, more steeply sloping on the northern (inner) side. Ditch 190290 was the earlier of the two recuts and had been allowed to silt up before it was recut slightly to the north by ditch 190289 (Fig 4.3). Its width is uncertain but was probably similar to that of 190289. The ditch was about 1.15m deep and had a markedly flat base 0.55m wide. Ditch 190289 was 2.45m wide and 1.30m deep; its base was much more rounded than that of 190290 and its northern side was particularly steep sloping. Sections excavated across this series of later Roman ditches in previous works (Wessex Archaeology 2008; Egging Dinwiddy and Schuster 2009) correspond well with the sequence recorded in Zone 4. Grave 147255 (see below) was cut through the upper fill of Late Iron Age ditch 190288. Graves were also recorded cut into the

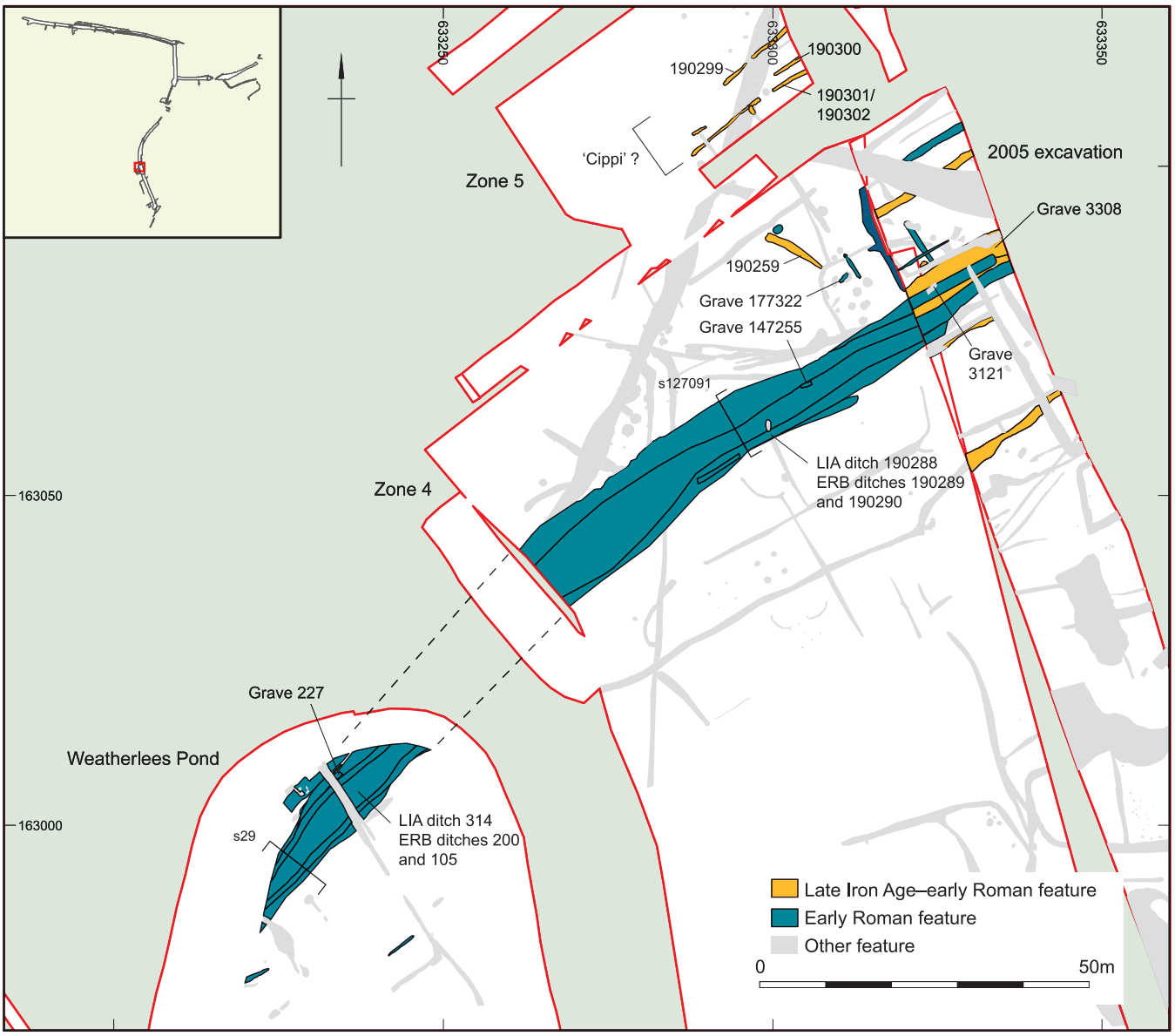


Fig 4.2 Plan of Late Iron Age and Roman features (Zones 4, 5 and Weatherlees Pond)

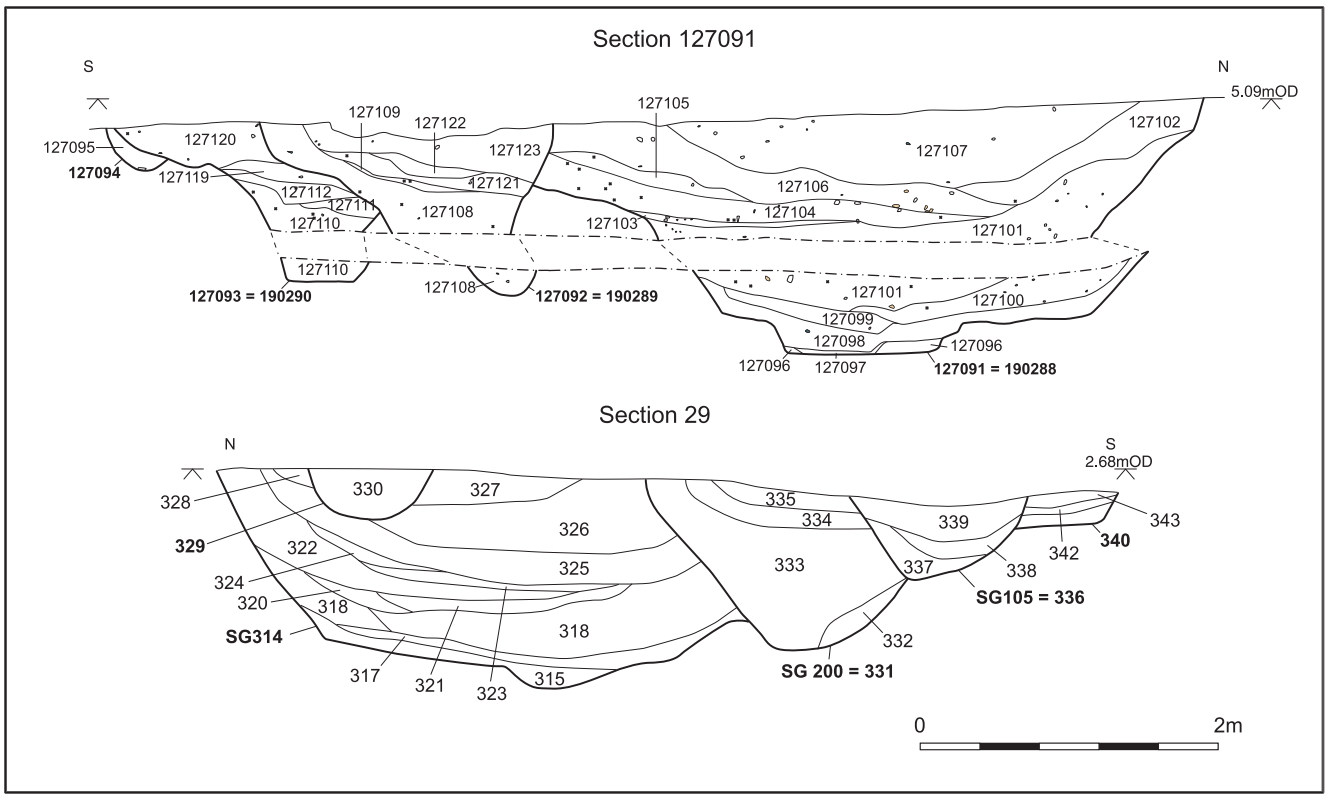


Fig 4.3 Sections of Late Iron Age and early Roman ditches 127091, 127092, 127093 and 127094 (Zone 4) and 105, 200 and 314 (Weatherlees Pond)

Late Iron Age ditch in previous phases of archaeological work to the east and west (Wessex Archaeology 2008; Andrews *et al* 2009; see below).

In Weatherlees Pond Late Iron Age ditch 314 was recut by early Roman ditch 200, which had a steep-sided, V-shaped profile and was up to 1.15m deep and contained between two and five deposits that were naturally derived (Fig 4.3). This ditch matches well with ditch 190289 recorded in Zone 4. Ditch 200 was re-cut along its southern edge by early Roman ditch 105; the recut had a wide V-shaped profile and became broader and deeper to the west, with a maximum depth of 0.55m.

Burials

Two graves, broadly Late Iron Age or early Roman in date, were present at the north end of Zone 4 (see Chap 3; Fig 4.2). Grave 147255 was dug into the top of Middle/Late Iron Age ditch 190288. It was probably earlier in date than the fill of the early Roman ditch 190289, the later of the two recuts of 109288, but this is not certain. Further inhumation burials cut into the fill of the Late Iron Age ditch had been recorded previously immediately to the east and west of Zone 4 (Wessex Archaeology 2008; Egging Dinwiddy and Schuster 2009; see below). Grave 147255 contained the remains of two individuals (Pl 4.1), the earlier (147256), a young woman, laid on her left side and the later, an older woman, on her right side. Bone from inhumation 147256 gave a radiocarbon determination of 200–1 cal BC (2080±30 BP, SUERC-40286), placing it in the Middle–Late Iron Age, rather earlier than anticipated (see Chap 3), and earlier than the Late Iron Age–early Roman dates obtained from two of the four inhumations recorded in 2005, both buried in graves cut into the top of the ditch fills (Egging Dinwiddy and Schuster 2009, 105, 170).

Grave 177322 was cut into the top of a Middle/Late Iron Age pit in the north-east corner of Zone 4 and contained a single inhumation burial; probable coffin nails were recovered from the grave.

Human remains were also recovered from the top of Middle/Late Iron Age ditch 314 in the Weatherlees Pond excavations (Fig 4.2). Burials recorded cut into the top fills of this ditch in other phases of work (Egging Dinwiddy and Schuster 2009, 107, fig 2.19) have been broadly dated to the early Roman period and this is also likely to be the case here. A disarticulated femur was recorded in the upper secondary fill (235) of the ditch and grave 227 was cut into the upper fills of ditch 314. Grave 227 was fairly shallow (0.10m deep) and located on the north-western edge of the ditch; it contained the remains of a single inhumation burial and had been cut by medieval field ditch 230 and by an undated pit (232), resulting in considerable disturbance to the burial.

Pl 4.1 Late Iron Age–early Roman double burial in grave 147255 (Zone 4; view from north)

Grave catalogue

Grave 227 (Burial 228)

Not illus

No grave cut was distinguished within upper fill of ditch and position of body is unclear from what little survived.

Human Remains: *c* 2%, adult *c* 30–45 yr. Male.

Grave 147255 (Burial 147256 and Burial 147257)

Pl 4.1

Grave: WSW–ENE aligned, sub-rectangular with rounded ends, steep concave sides and flat base – 1.18 x 0.55m by 0.35m deep. Dark greyish brown silty loam/redeposited ditch fills.

Double burial, with 147256 preceding 147257.

Human Remains: 1) 147256 Burial is laid on left side, partly flexed with head to the west, *c* 85% skeletal recovery, subadult *c* 16–17 yr. Female. 2) 147257 Burial is laid on right side, flexed with head to the west, *c* 65% skeletal recovery, adult >50 yr. Female.

Grave 177322 (Burial 177324)

Fig 4.4

Grave: NW–SE aligned, sub-rectangular, shallow concave sides and flat base – 1.19 x 1.7m by 0.15m deep. Very dark greyish brown silty loam fill (177323).

Human Remains: Burial is supine and extended, *c* 50% skeletal recovery, subadult *c* 14–15 yr.? Female.

Grave Goods: ON 3519–3522 and ON 3523–3527, all Fe nails.

Other features

A single NE–SW aligned possible Roman ditch 159268 (not illustrated) was located towards the north-eastern corner of the zone. The ditch had a shallow, concave profile and contained a single fill. Finds recovered from the ditch included both Roman and medieval pottery. The date of this feature is uncertain; it has been phased to the Roman period, but it may well have been medieval in date.

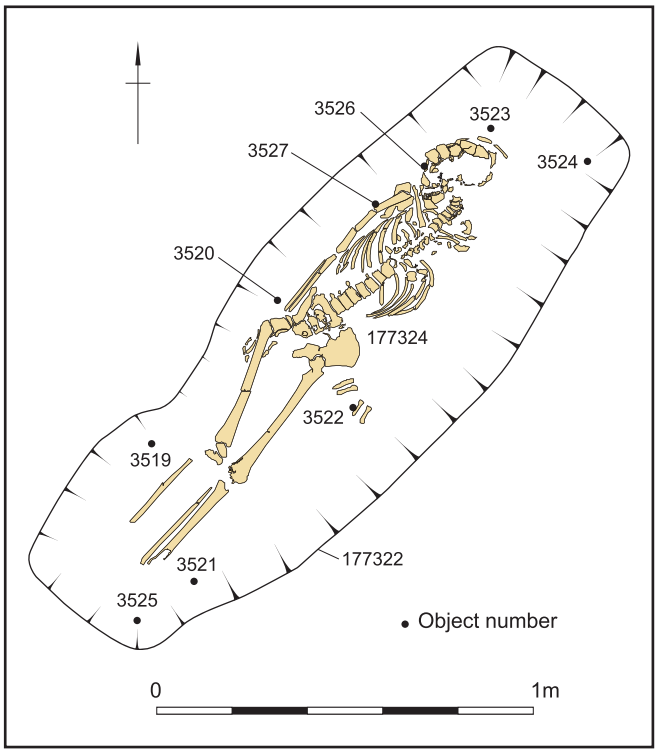


Fig 4.4 Plan of grave 177322 (Zone 4)

Zone 6

Zone 6 saw activity of varying levels of intensity throughout the Roman period. The features and deposits were superimposed on an already long sequence of earlier activity, resulting in a plan of great complexity (for the combined Late Iron Age and Roman features alone see Fig 4.5). This presents many difficulties of interpretation and some of the details of the following narrative are inevitably open to question.

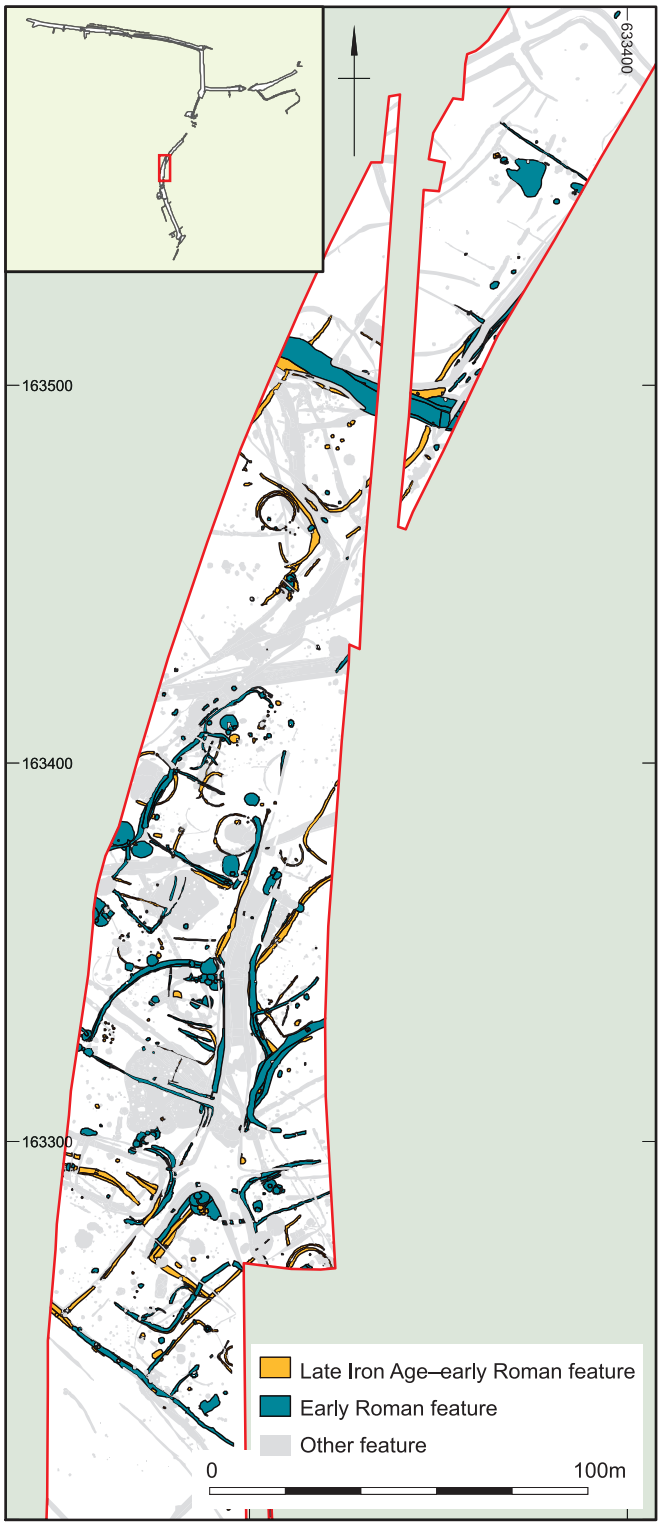


Fig 4.5 Plan of Late Iron Age and early Roman features in Zone 6 and southern part of Zone 7

Late Iron Age–early Roman

Aspects of this phase have been discussed above (Chap 3), but the settlement plan is reprised here (Fig 4.5) as elements of it are reflected in the early Roman phase. The previous, Late Iron Age phase saw the establishment of a series of compounds defined by rectilinear and curvilinear ditches, their layout reflecting the presence of a long-lived north–south trackway. Associated with the compounds were a number of circular or penannular gullies, marking the locations of roundhouses or similar structures. The ditch of a large Late Iron Age defensive enclosure on the west shore of the Wantsum Channel crossed the northern extremity of Zone 6, continuing eastwards into Zone 7 before turning and running south. It has been argued above (Chap 3) that this enclosure may have been associated with Julius Caesar's campaigns of 55 and 54 BC.

Early Roman

Activity in this phase is represented by features that contained pottery with a fairly certain post- (Claudian) conquest date, and although many of the ditches of the previous phase were superseded, some, especially towards the northern end of the zone, may have continued in use (Fig 4.6). During this period the defensive ditch of the previous phase at the north end of the zone was recut on a larger scale, and the north-south orientated trackway within the centre of the area, which also had its inception in the later Iron Age, was redefined (see Pl 4.2). A series of fairly long-lived enclosures (judging by the frequent recutting of ditches) were accessed from either side of the trackway and contained large pits, a single sunken-featured building, a well, a waterhole and a four-post structure. Evidence for other types of building was absent, although these could have been present, but constructed using techniques that rendered them archaeologically invisible.

Ditch 170041

The defensive ditch (170082) of the previous phase was recut on the same alignment by ditch 170041 (262110 in section 262118), which was considerably deeper, measuring up to 7.25m wide and 3.45m deep (Fig 4.7; Pl 4.2). The ditch had a V-shaped profile which was steeper on the southern side and was slightly stepped on the northern side. Although no definite bank material was present, the majority of the lower fills appeared to have entered the ditch from the southern side, an area devoid of any contemporary features. The lowest fill, a blue grey silty clay up to 0.7m thick, contained a few sherds of pottery of broad early Roman date. This was overlain by a sequence of similar fills which had also accumulated gradually and were eventually overlain by dumps of domestic waste which contained pottery of middle Roman and then late Roman dates. A group of iron nails was recovered from upper fill on the northern edge. It is likely that this ditch, in association with similar ditches recorded within the pipeline works to the south-east (Egging Dinwiddy and Schuster 2009) and within Zone 4 to the south, formed a large enclosure and, furthermore, there is a possibility that this could have been associated with the Claudian invasion of AD 43 (see Fitzpatrick, Chap 3 for a further discussion of this). The ditch, which continued to the east into Zone 7, may also have had a gap or entrance point in the area of Ebbsfleet Lane, between the two zones.

The area immediately to the south of ditch 170041 was devoid of features for at least 15m, and although the

Pl 4.2 Early Roman ditch 170041 cutting ditch 170082 (Zone 6; view from south)

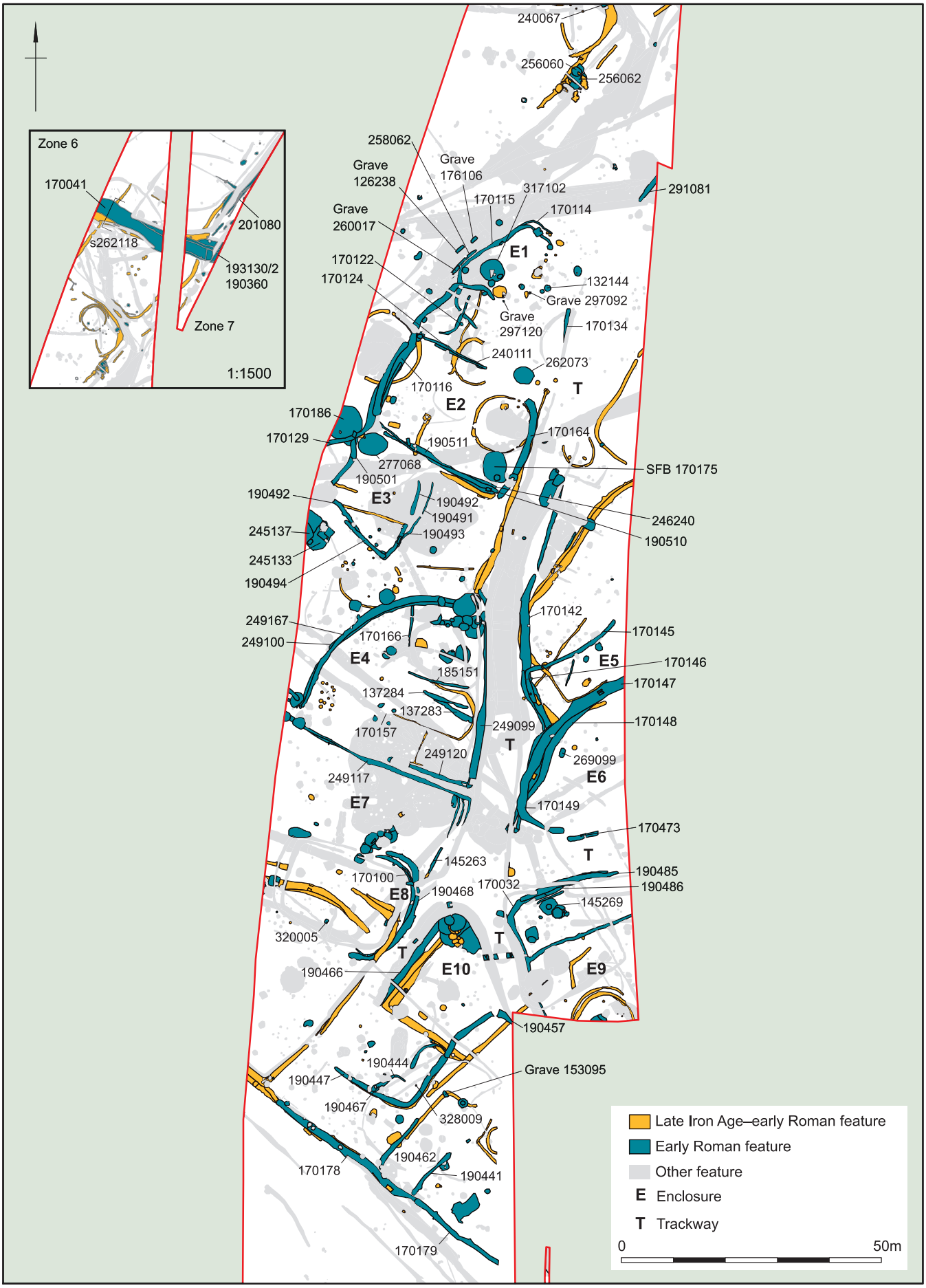


Fig 4.6 Plan of Late Iron Age and early Roman features in Zone 6 and at southern end of Zone 7

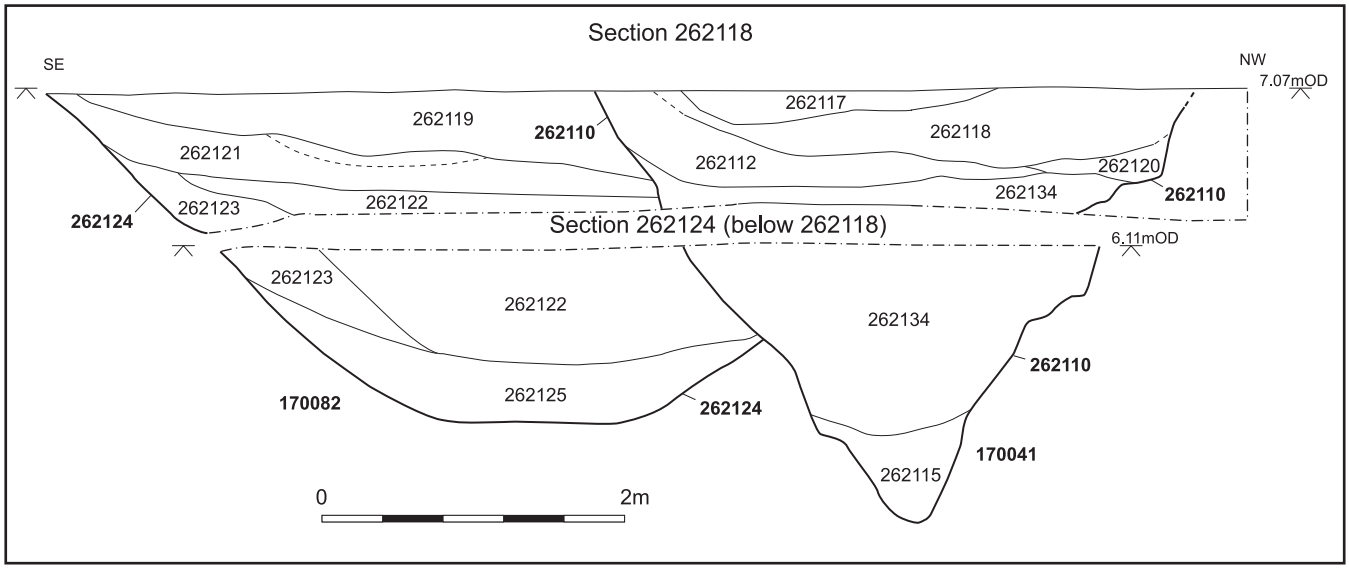


Fig 4.7 Section of Late Iron Age ditch 170082 and early Roman ditch 170041 (Zone 6)

ditches of the northern T-shaped trackway of the previous phase had become infilled, the related earthworks seem likely to have survived, as the track was to be redefined in the middle Roman period. Pit 240067 cut ditch 170046 (see above); 3m to the north-east lay pit 240063 (Fig 4.6). Pit 240067, which may originally have had a storage function, was vertical-sided and measured 1.9m across and was 0.95m deep.

Around 10m further to the south pits 250660 and 256062 cut ditch 170088, also a component of the earlier trackway. Both pits contained domestic waste, including pottery, animal bone and fragments of fired clay. Pit 250660 contained a copper alloy Nauheim derivative brooch (ON 2181) of probable post-conquest date, part of an iron knife (ON 2165) and a fragment of an upper stone from a beehive rotary quern (ON 4050). Part of an iron knife (ON 2153) came from pit 256062.

Approximately 85m to the south of ditch 170041 was the north end of a series of enclosures or compounds which extended a further 120m to the south (see Fig 4.6).

Enclosure 1

Curvilinear ditch 170115 was orientated NE–SW, turning to the south-east at both ends, and forming the western side of a roughly trapezoidal enclosure (Fig 4.6). Ditch 170115 probably replaced ditches 170114 to the north and 258062 to the west (which cut trackway 170111), that between them are likely to have defined part of a short lived precursor to the enclosure. The eastern side of the enclosure was formed by a short length of north-south aligned ditch (170134), the enclosed area measuring approximately 20m by between 20 and 25m. Towards the eastern side of the enclosure a sub-circular well (132144) had dimensions of 1.3m by 1.2m and was 3.2m deep. A partial arc of large, rounded flint nodules was present around the edge of the feature, but these did not continue below ground level, and the well had presumably been timber or wattle lined. Pottery dating to the middle Roman period came from the upper fills, with the well probably dug and in use in the early Roman period, but there were few other finds. Towards the west side of the enclosure a large circular pit (317102) had a diameter of 4.7m and a maximum depth of 0.6m. The single fill contained small amounts of pottery and animal bone fragments, but the original function of the pit, one of several similarly-sized examples within this phase, remains unclear.

Among a number of smaller features of early Roman date within the enclosure were two highly truncated inhumation burials, 297092 and 297120, a neonate and an adult respectively.

Immediately to the north-west, outside the enclosure, were three further burials of which 12638 and 176106 were cut through the metalled surface of earlier trackway 170111; grave 260017 lay a short distance to the south. All three burials were aligned NE–SW in similar, sub-rectangular graves with steep sides and a flat base; two contained evidence for coffins. There was an infant, juvenile and an adult female, the former in an unusually large grave for an infant. The only grave good, a pottery vessel in 260027, indicates an early Roman date, but the graves could be very slightly later.

Grave catalogue

Grave 126238 (Burial 126239a and b)

Not illus

Grave: NE–SW, rectangular with vertical sides and flat base sloping up to NE – 1.92 x 0.6m, 0.16m deep. Fill a soft mid-brown sandy silt with occasional rounded pebbles.

Human Remains: Burial supine with skull to NE. Coffin evidenced from iron nails ON 4314–4320. Skeletal recovery *c* 60%. Adult *c* 20–30 yr. Female (126239a). Plus teeth and scraps, adult 45 yr. ?Female (126239b).

Grave 176106 (Burial 176107)

Not illus

Grave: NE–SW, sub-rectangular with steep sides to flat base – 1.47 x 0.65m, 0.17m deep. Fill a dark grey brown compact silt with occasional charcoal flecks.

Human Remains: Burial supine with head to SW. *c* 80% skeletal recovery. Juvenile 5–6 yr. Plus one fragment – neonate.

Grave 260017 (Burial 260027)
Fig 4.8
Grave: NE–SW, sub-rectangular with steep sides to flat base – 1.85 x 0.65m, 0.12m deep. Fill of mid-brown sandy silt with occasional rounded pebbles. Coffined burial indicated by nails. Grave unusually large for infant burial; revisited?
Human Remains: Burial position unclear. *c* 1% skeletal recovery. Infant 6–9 mths.
Grave Goods:
ON 3916: Fine greyware biconical beaker (Monaghan 1987, type 2G1), AD 70–120/130. Capacity *c* 250ml. Context 260027.
11 nails and further nail fragments (ON 3920–1, 3923–5, 3928, 3930, 3930—8, 3939, 3942—4, 3946—9, 3953, 3954, 4476).
ON 3926: 2 Sheet fragments, Fe.
ON 3927: Fragment, undiagnostic, Fe.
ON 3930: L-shaped staple? Fe.
ON 3931: Strip fragment, Fe.
ON 3937: Holdfast or hook, Fe.
ON 3938: Lump, undiagnostic, Fe.
ON 3945: lump, undiagnostic, Fe.

Grave 297092 (Burial 297090)
Not illus
Grave: NE–SW, shallow irregular cut, flat based and truncated – 0.43 x 0.42m, 0.07m deep. Fill of dark brown silty clay with occasional flecks of charcoal.
Human Remains: c 25% skeletal recovery. Neonate 0–2 wks. No grave goods.

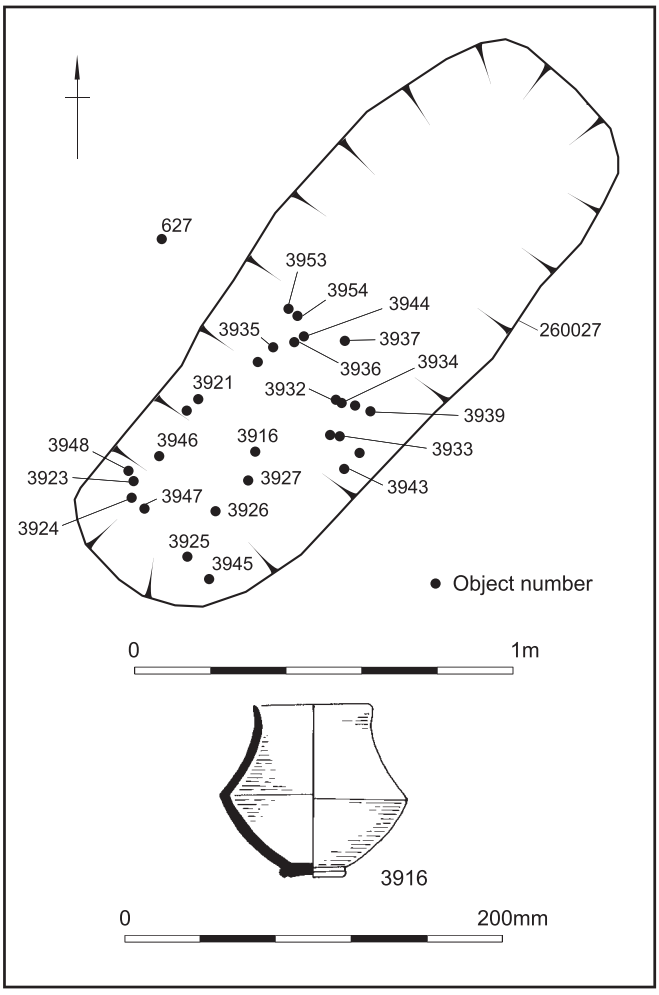


Fig 4.8 Plan of early Roman grave 260017 (Zone 6)

Grave 297120 (Burial 297119)
Not illus
Grave: NW–SE, ovoid with steep sides to flat base – 0.42 x 0.3m, 0.11m deep. Fill a dark brown silty clay.
Human Remains: Fragmentary skull to southern end of cut, *c* 3% skeletal recovery. Adult >18 yr. No grave goods.

Enclosure 2
Enclosure 1 ditch 170115 was cut towards its southern end by ditch 170116, which was similar in morphology, although longer. It extended in a NNE–SSW direction, curving to the east at its northern end, to the west at its southern end (as ditch 170129) and forming the western side of a further enclosure probably added to that to the north. This new enclosure measured approximately 35m by 30m. Ditch 170116 was partially recut twice, first by 170131 and then by 170128, and was clearly a boundary of some importance. The southern edge of the enclosure was defined by a NW–SE aligned ditch, 246240. This had also been recut twice, first by ditch 190511, which was in turn replaced by ditch 190510, at which point a narrow entrance was created in the south-western corner of the enclosure. The eastern edge of the enclosure was formed by ditch 170164, aligned NNE–SSW, with the hint of a curve to the west at the northern end. Ditch 170164 may originally have lined up with ditch 170124 which formed an internal division, itself recut by ditch 240111, which did not extend quite as far to the west. To the north of ditch 240111 a curving ditch (170122) separated off a small area within the north-west corner of the main enclosure, and like 170116 also cut ditch 170115.

Within the angle formed by ditches 170164 and 246240 in the south-east corner of the enclosure was a sub-circular possible sunken-featured building (170175), which cut the circular gully of roundhouse 190505 of the previous phase. The SFB had moderately sloping sides, a flat base and measured 5.8m long and 4.4m wide with a depth of 0.5m. In addition to animal bone and pottery, a fragmentary fired clay possible loomweight (ON 4771) was recovered from the infill. No internal features or external postholes which could be related to the structure were noted.

To the north of the sunken-featured building a large pit (267073) had a diameter of 3.85m and a depth of 0.95m and could have been a waterhole. Certainly the interface between the two fills was horizontal, suggesting that water may have played a part in the depositional process. Only a few sherds of pottery and residual struck flint were recovered from the feature's upper fill.

Enclosure 3
Ditch 246240, the southern boundary to enclosure 2, also formed the northern side of a small sub-square enclosure to the south-west. This enclosure measured approximately 20m by 15m, part of the western edge of which was defined by the southern curve of ditch 170129 and the eastern side by ditch segments 190491 and 190493, the latter continuing around the south and probably also the west side; there were entrances in the north-eastern and north-western corners. The western and southern sides of the enclosure were redefined by

ditch 190492, and ditch 190491 replaced by 190490, as the area enclosed contracted slightly. Finally the north-western entrance was blocked by the addition of a short length of ditch, 190501, and the southern boundary was recut by ditch 190494. In the north-western corner of the enclosure a large steep-sided rubbish pit (277068) had a diameter of around 5.8m and was 0.7m deep with an irregular base. The pit contained fairly large amounts of cattle and sheep/goat bone, burnt flint and pottery, a lesser quantity of marine shell and a redeposited linear type 1 potin (ON 2929). A larger pit (170186) was situated west of ditch 170129 and extended beyond the limit of excavation. The pit, which had a diameter of 6.9m and was up to 1.4m deep, contained a similar assemblage of finds to adjacent pit 277068.

Ditches 170134 and 170164 which formed the eastern edges of the northern two enclosures (1 and 2) are also likely to have formed the western side of a wide trackway or droveway which became better defined further to the south. This trackway followed the same general north-south route first laid out in the previous phase, and which was further formalised within the middle Roman period.

Enclosure 4

Further to the south, ditch 249099 formed the eastern edge of a D-shaped enclosure and also defined the western side of the trackway. The northern and western edges of this enclosure were followed by curving ditch 249167, later recut as 249100 (Fig 4.6). An entrance to the west side was indicated by a gap of around 3m between the southern terminal of ditch 249167 (249100 terminated in the same place) and ditch 249117, which formed the southern edge of the enclosure, itself a recut of ditch 249124. An entrance in the south-eastern corner of the enclosure was marked by a narrow trackway, up to 1.3m wide, defined by 249117 and parallel ditch 249120 to the north. The enclosure was partially subdivided by a series of small ditches which extended in a WNW–ESE direction from the western edge (ditches 137282, 137284 and 185151). These were not contemporary, but rather represent an instance of boundary migration, and along with a steep-sided, narrow ditch (170166) only 0.5m wide enclosed the north-eastern corner. Within this enclosed area a series of intercutting pits contained relatively small quantities of domestic refuse, with pit 240189 also producing part of an iron knife blade (ON 4643). One of the pits (222121), fairly well dated to the early Roman period was also noted to cut the ditches which formed the northern edge of the enclosure. Towards the centre of the southern part of the main enclosed area a four-post structure, 170157, was dated to this phase on the basis of three sherds of pottery from a single posthole. The postholes were sited 2.9m apart and the post settings were rather larger than those of equivalent earlier features, with diameters up to 0.8m and depths of 0.6m.

Enclosure 5

To the east of the D-shaped enclosure a slightly sinuous ditch (170142) up to 2m wide and 0.8m deep ran in a north-south direction, curving to the east at its southern end, and broadly parallel with ditch 249099 to the west. Ditch 170142 formed the eastern edge of the north-south trackway which was between 6.5m and 9m wide in this area. Ditch 170145 terminated within ditch 170142, partly recutting it, before turning sharply to the north-east, enclosing an area occupied by two small rubbish pits and partly subdivided by a short narrow north-south orientated gully, 170156. The western edge of this enclosure was redefined by ditch 170146, which terminated adjacent to the point where ditch 170145 changed direction.

Enclosure 6

The arrangement of ditches forming enclosure 5 was replaced (or added to) by a sequence of ditches to the south which appeared to mirror D-shaped enclosure 4 on the western side of the trackway. The earliest ditch within this new sequence was 170149 and was aligned broadly NE–SW, defining an area to the east, and cutting ditches 170142 and 170146 of the earlier northern enclosure. This ditch was replaced by 170148, which was similarly aligned, but situated slightly further to the south-east, and both were cut by the final ditch in the sequence, 170147, which curved sharply to the east at its southernmost extent. A short length of ditch, 170473, lay to the south and defined the southern boundary of the enclosure, with possibly another trackway beyond this, 6.5m wide, and extending to the east from the north-south trackway. Only a single extremely shallow pit (269099) of early Roman date was located within the western side of the enclosure.

Southern enclosures and trackways

To the south of the two D-shaped enclosures (4 and 6) the north–south trackway split into two separate branches, running to the south-west and south-east, an arrangement that continued into the middle Roman period (Fig 4.6).

The eastern branch of the trackway was defined on the eastern side by ditch 170032, although the width of the track at this point was unclear, as an assumed western boundary ditch was not present, probably due to truncation by a ditch of middle Roman date (170150, see below). However, the distribution of pits suggests that the trackway was approximately 5m wide here. Possibly coincidentally this branch of the trackway appears to align with part of the course of Ebbsfleet Lane to the south as shown on the 1st edition OS map, suggesting perhaps that this section of the route somehow became fossilised within the later landscape, and may have continued as far as the neck of the Ebbsfleet peninsula within Zone 4. If this was the case then there would have been some hiatus of use, as this trackway went out of use in the late Roman period.

The western branch of the trackway (up to 3.5m wide) was bounded by ditches 170100 and 190466.

Enclosure 7

South of the western D-shaped enclosure (E4) described above was a rectangular enclosure of which

the northern edge and part of the eastern edge were defined by ditch 249117, with ditch 145263 further to the south, the latter also forming the western edge of the south-west branch of the trackway. This rectangular enclosure extended to the west of the excavation area but the southern limit was unclear. The broad alignment and correspondence in form to the earlier, Late Iron Age ditches to the south-west suggests that the enclosure may in some way have reflected a later development of this arrangement. Within this area a group of intercutting pits covered an area of approximately 7.75m by 4.3m, and contained generally small amounts of animal bone and pottery and little else. These pits lay close to the western terminal of curvilinear ditch 170100.

Enclosure 8

Ditch 170100 ran for approximately 20m in a NE–SW direction along the west side of the south-west branch of the trackway. It curved to the west at both ends, before terminating, and defined the eastern edge of a further probable enclosure, which was recut by similar ditch 190468. Ditch 170100 had no stratigraphic relationship with enclosure ditch 145263 to the north, but it is perhaps most likely that it represents a later development, though it might be an integral part, perhaps a sub-enclosure within a broader arrangement that included 145263 and 249117.

Only three dispersed pits were present within the enclosed area, one small example to the south (320005) contained a few pottery sherds, small fragments of animal bone and a probable tanged and bladed iron tool (ON 3871).

Enclosure 9

Ditch 170032 on the east side of the south-east branch of the trackway also formed the western and northern edges of a possibly rectangular enclosure, the extent of which was unclear as the east and south sides lay beyond the limit of excavation. However, it could have covered an area of 20m by at least 25m. Ditch 170032 was recut along the northern edge, first by ditch 190486, and later by ditch 190485, both of which terminated adjacent to the eastern limit of excavation. Ditch 170032 also formed a NE–SW running division crossing the northern end of the enclosure. A group of intercutting pits, including 145269 and 145272, lay towards the northern edge of the enclosure and north of this division; these pits contained occasional pottery fragments and pieces of animal bone but few other finds.

Enclosure 10

Between the south-west and south-east branches of the trackway was an L-shaped ditch (190447) that ran in a NE–SW direction before turning at right angles to the north-west and terminating in line with the projected edge of the south-west branch of the trackway. Ditch 190447 was later extended to the north-east by ditch 190457, which turned sharply to the south-east at its northern end, where it possibly defined the west side of the south-east branch of the trackway. Ditch 190447 along with ditch 190466, to the north at the junction of the south-east and south-west branches of the trackway, may have partly defined a sub-rectangular enclosure, measuring approximately 30m by 15m, though there were large gaps in the projected boundary to the north-east and south-west. Ditch 190447 contained part of the skull of a human adult, possibly a male (153091), which may have been associated with a small iron penannular object (ON 3280). Curvilinear ditches 190444 and 190467 extended to the west and north of the southern angle of ditch 190467, enclosing two small areas (or possibly one larger area) each with dimensions of around 5.6m by 4.3m and perhaps related to penning livestock. Posthole 328009 may represent the remains of a fence or gate associated with the most southerly of these two small enclosed areas.

A few metres to the east of ditch 190447 a poorly surviving inhumation burial (grave 153095) cut a ditch of Late Iron Age or early Roman date, and was dated to this phase on the basis of over 40 sherds of pottery including 12 of Roman date. However, the two beads, particularly the polychrome example, might be of Anglo-Saxon date (see Vol 2, Nelson, Chap 7).

Grave catalogue

Grave 153095 (Burial 153096)

Not illus

Grave: NW–SE, sub-rectangular with unclear sides and flat base – 1.40 x 0.70m, very shallow. Fill of dark brown silty clay loam with occasional charcoal flecks.

Human Remains: Burial is supine extended with head to south-east. Skeletal recovery *c* 35%. Adult *c* 45–55 yr. ?Male.

Grave Goods:

ON 411 Beads x2, glass: small, pale orange and polychrome – opaque red with yellow trails.

Settlement boundary

The southern settlement boundary that had its inception in the Middle or Late Iron Age was again redefined within this phase by NW–SE aligned ditch 170178, the eastern part of which was recut by ditch 170179. Ditch 170179 was 1.5m wide and 0.8m deep and contained a small quantity of Late Iron Age–early Roman pottery and few other finds. Two smaller ditches (190462 and 190441) extended from the boundary at right angles to the north-west, forming additional small subdivisions of the area, although only a few scattered pits within the vicinity are likely to have been related.

Middle Roman

During the middle Roman period the northern trackway of Late Iron Age inception was re-established by the digging of new flanking ditches, which may have respected the earthworks that remained from the earlier phase, the trackway ditches also forming the boundaries of enclosures (Fig 4.9). Towards the south of the zone the north-south aligned trackway, also of Late Iron Age or early Roman origin, was made narrower and the track's surface was metalled. Further enclosures to either side of the track contained sunken-featured buildings, and two wells were present in the area between the two southern trackway branches. The southern settlement boundary was also redefined.

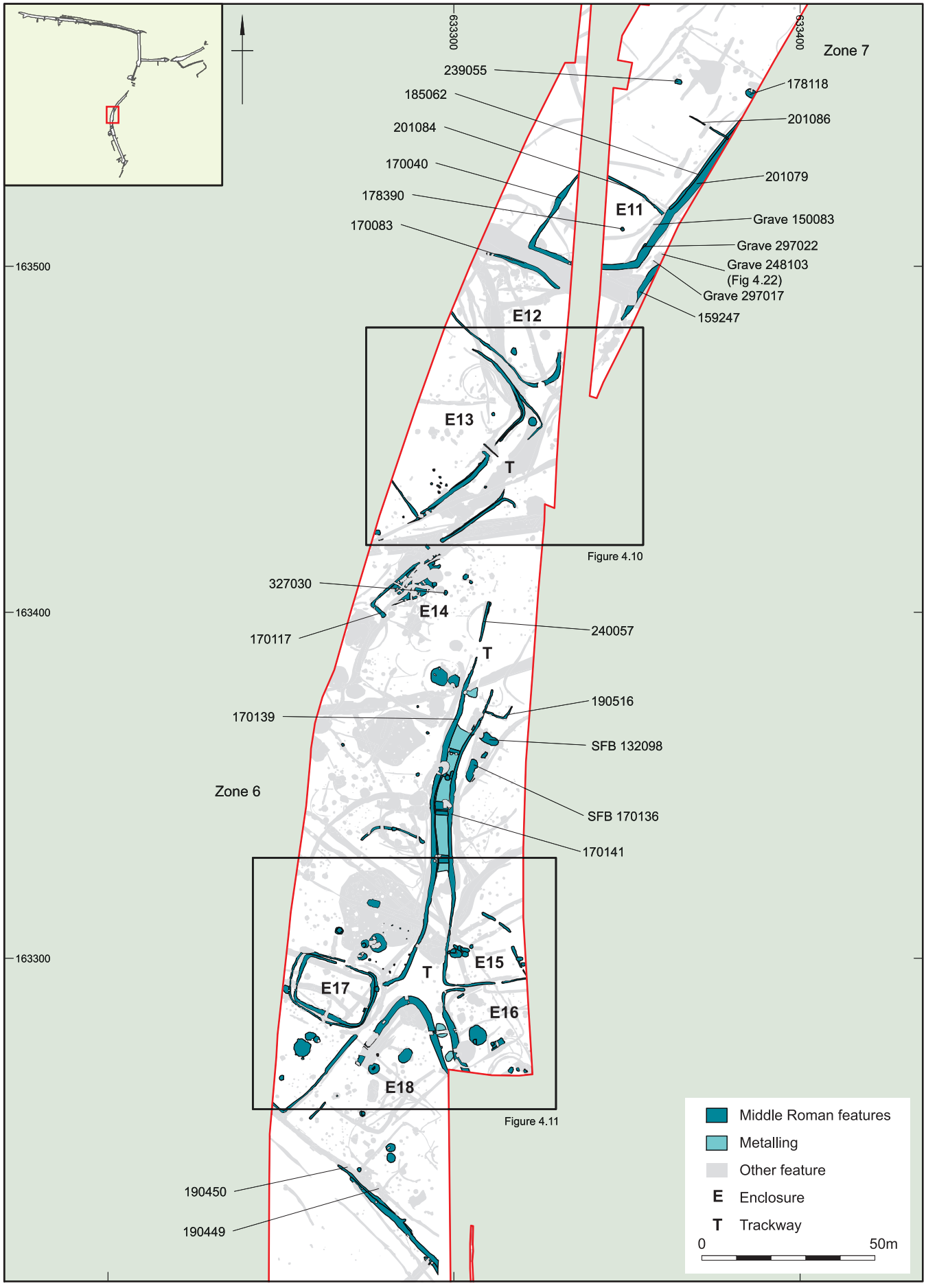


Fig 4.9 Plan of middle Roman features in Zone 6 and southern part of Zone 7

During a previous evaluation (Perkins 1992a) the flint cobble footings of two possibly rectangular buildings of Roman date were uncovered, one to the east, and one to the west of Zone 6, the eastern example aligned broadly parallel to the wide NE–SW aligned element of the northern trackway. Although excavation of these structures was minimal and they are therefore poorly dated, it may be that they can be associated with this phase of activity within Zone 6.

Enclosure 11

The defensive ditch (170041) of the previous phase had by this time partly silted up, and was probably in use as a receptacle for refuse deposition. A narrow L-shaped ditch (170040) cut through the infill along the northern edge of ditch 170041. Ditch 170040 appears to have formed a sub-square enclosure with similarly aligned ditches 201079 and 201084 at the southern end of Zone 7, together enclosing an area of approximately 25m square.

Enclosure 12

To the south, and aligned parallel with the southern edge of ditch 170040, ditch 170083 formed the northern edge of another enclosure, which was bounded to the south and west by ditch 170089, the enclosed area measuring around 34m by 24m. A rubbish pit (255053) located towards the south of the enclosed area was the only contemporary feature observed, and contained pottery, animal bone and a range of marine shell.

In addition to forming the southern and western edges of the enclosure, ditch 170089 marked one edge of a narrow trackway with ditch 170045 situated 2.5m to the south-west marking the other (Fig 4.10). To the north-east and south-west these ditches also formed part of the west side of this phase of the NE–SW aligned trackway and recut those of the Late Iron Age. The recutting followed what appears to have been a hiatus in definition of the trackway, but the ditches follow such similar alignments that the track must surely have remained in existence in some form throughout the early Roman period.

Enclosure 13

Ditch 170045 had replaced both ditch 170093, which shared the same alignment, and ditch 170047, which extended further to the south-east before turning sharply to the south-west (Fig 4.10). Both of these earlier ditches also contained pottery of middle Roman date.

Within the angle formed by the corner of ditch 170047 a large pit or possibly a well (269061) had a diameter of 2.5m, and was excavated to a depth of just over a metre, at which point the high level of the water table made further excavation unsafe. In addition to moderate quantities of domestic waste, especially animal bone (again mainly cattle and sheep/goat), the feature contained a fragment of pipe clay figurine (ON 873) of probable late 1st- or early 2nd-century date.

After a gap of just over 3m, probably an entrance, the NE–SW line of ditch 170045 continued to the south-

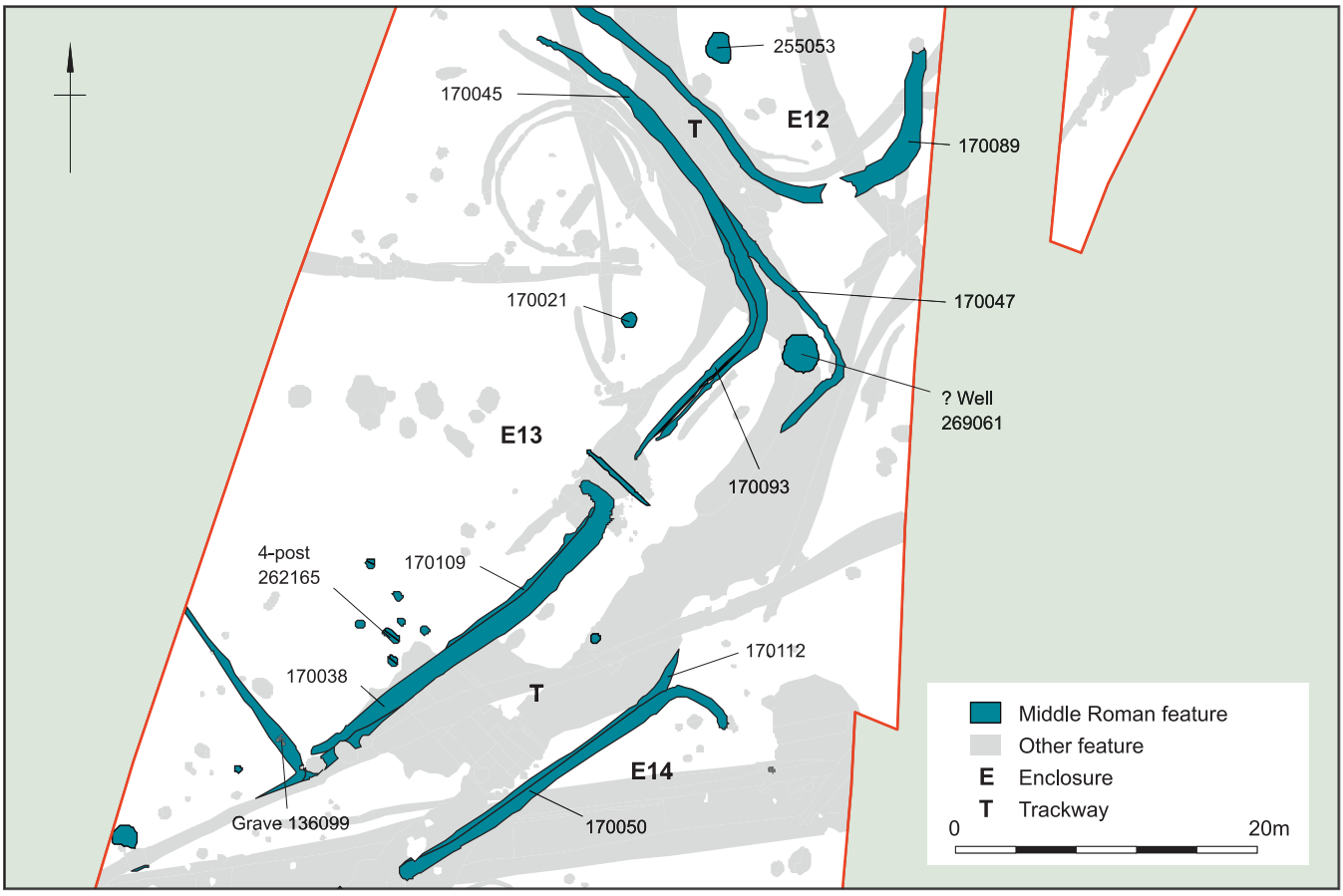


Fig 4.10 Plan of middle Roman features in northern part of Zone 6

west as ditch 170038 (itself a recut of ditch 170109), forming the eastern side of an enclosure, bounded to the south-west by ditch 170049; this latter ditch contained the heavily disturbed remains of a human burial in grave 136099 (just 3% of an adult male aged over 35 yrs). The enclosure, which continued beyond the edge of Zone 6 to the west, measured around 43m across along its NE–SW axis. A pit within the north-east corner (170021) contained domestic refuse and a copper alloy hairpin (ON 614, see Fig 4.121, 18). Adjacent to the boundary ditch within the south of the enclosure a post-built structure (262165) appeared to be aligned with the ditch, but was poorly dated. The four outer postholes formed a square measuring 3.1m across. In the centre of the structure a shallow linear pit and a posthole may have been related, as may another posthole a short distance to the north-west.

Enclosure 14

Ditch 170050 was parallel to ditch 170031 (a recut of ditch 170112). Ditch 170050 curved to the south-east at its north-eastern end, whereas the earlier ditch curved slightly to the north, but otherwise they followed the same alignment, forming the southern edge of a major trackway up to 9.3m wide, and cutting through the centre of the Iron Age metalled surface 170111 (see Chap 3). After a gap of 7.8m, presumably a large central entrance providing an access to a possible enclosure to the south-east, the southern edge of the trackway continued as ditch 170117 (Fig 4.9), which ran to the south-west, turning sharply to the south-east at its south-west end.

A short length of ditch to the west (240057) may have formed the eastern side of the enclosure, triangular in shape, and measuring up to 50m long and 35m wide. Towards the southern end of this postulated enclosure (and on a projected line from the NW–SE portion of ditch 170117) was a pair of large shallow pits which contained domestic rubbish. A further cluster of smaller pits was present towards the centre of the enclosure, one of which (327030) contained a well-preserved copper alloy ear scoop and a decorated nail cleaner (ON 3967, see Fig 4.121, 20).

Southern trackway

After a gap of around 4.5m, the line of ditch 240057 continued to the south as ditch 170139, and formed the western side of the southern, major trackway that was broadly north-south aligned, the corresponding side to the east comprising parallel ditch 170141. The trackway dominated the central part of Zone 6, and measured just

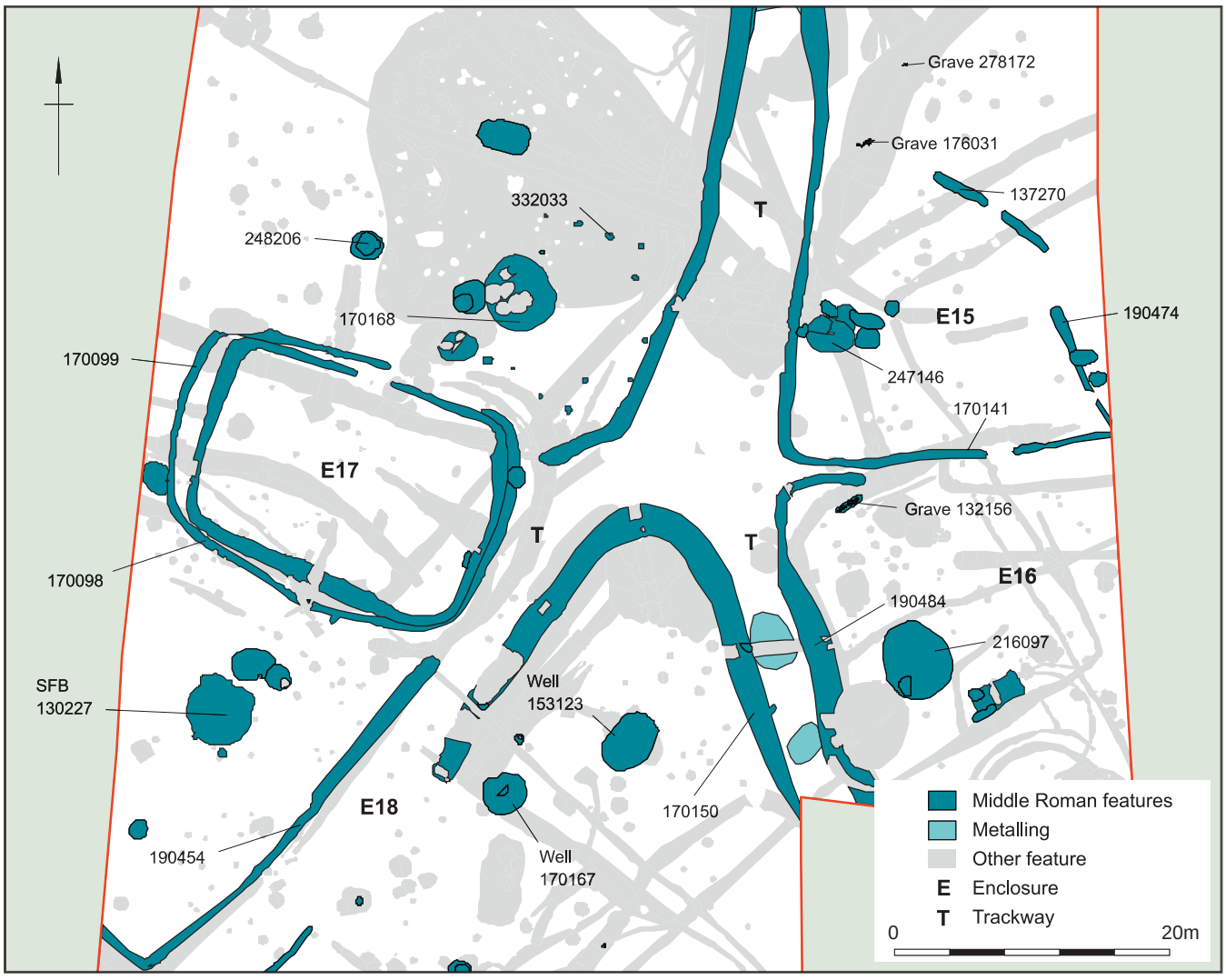


Fig 4.11 Plan of middle Roman features in southern part of Zone 6

Pl 4.3 Mid-Roman sunken-featured buildings 170136 in foreground and 132098 in background (Zone 6; view from south-west)

over 4m wide in the north, widening to the south to over 11.5m, at which point the track split, mirroring that division first seen in the early Roman period (see above). Patches of metalled surface were present in the central and northern parts of the trackway; these consisted of densely packed pebbles, animal bone fragments, pieces of tile and pottery sherds with a date suggesting that the track was still being used towards the end of the 2nd century. The split at the southern end of the trackway was defined by a ditch (170150) of inverted U-shape in plan, and the south-east branch also had two areas of remaining metalled surface (Fig 4.11).

Features to the east and west of the trackway

East of the trackway a potential sunken-featured building or working hollow was situated to the south of a small L-shaped ditch (190516) within an otherwise open area (Fig 4.9; Pl 4.3). The feature (170136), aligned parallel and approximately 3m from the trackway, was 6.4m long, 2.2m wide and 0.24m deep, with gently sloping sides and a flat base. A cluster of postholes was located within the southern end. Two fragments of a small copper alloy bracelet (ON 3983) and fragments of copper alloy sheet were recovered from the fill, in addition to pottery, animal bone, tile and oyster shell. A similar feature, 132098, approximately 6m to the north and at 90° to the trackway, measured 5.7m by 2.35m and 0.28m deep. There were no associated postholes or other structural features associated with feature 132098. It contained a similar assemblage of finds to possible SFB 170136, including an iron fitting (ON 3294) and a fragment of an unidentifiable copper alloy object (ON 3980). However, these few metal items were deposited amongst what appeared to be domestic refuse and shed little light on the original function of either feature.

Enclosure 15

A further possible sunken-featured building (247146) was located around 50m to the south of putative structures 132098 and 170136, and situated within a small triangular enclosure (E15) on the west side of the trackway (Fig 4.11). This enclosure, measuring approximately 20m by 20m, was formed by a west-east return of the eastern trackway ditch (170141) and a segmented ditch orientated broadly NW–SE consisting of features 137270 and 190474. Hollow 247146 was ovoid in shape and measured around 3.5m long and 2.5m wide with a depth of up to 0.3m. The lower fill was quite rich in charcoal and contained several fragments of tile, an iron hinge (ON 899), and a socketed hook-shaped cutting tool (ON 897). To the north of the hollow were several small pits containing various but generally small amounts of pottery and animal bone.

A further sunken-featured building (170168) lay to the west, apparently set within or associated with a small fenced enclosure defined by a series of postholes (332033) (Fig 4.11). Sunken-featured building 170168 was of ovoid form with dimensions of 5.4m by 4.6m and a depth of 0.45m (Fig 4.12); two large postholes within the northern end of the feature were probably associated. The two fills contained occasional tile and animal bone, but fairly large quantities of pottery.

A well (248206) to the west of the building had a diameter at the surface of 2.05m. The well, which was excavated to a depth of 1.8m (although augering revealed a depth of over 4.5m), had been backfilled with

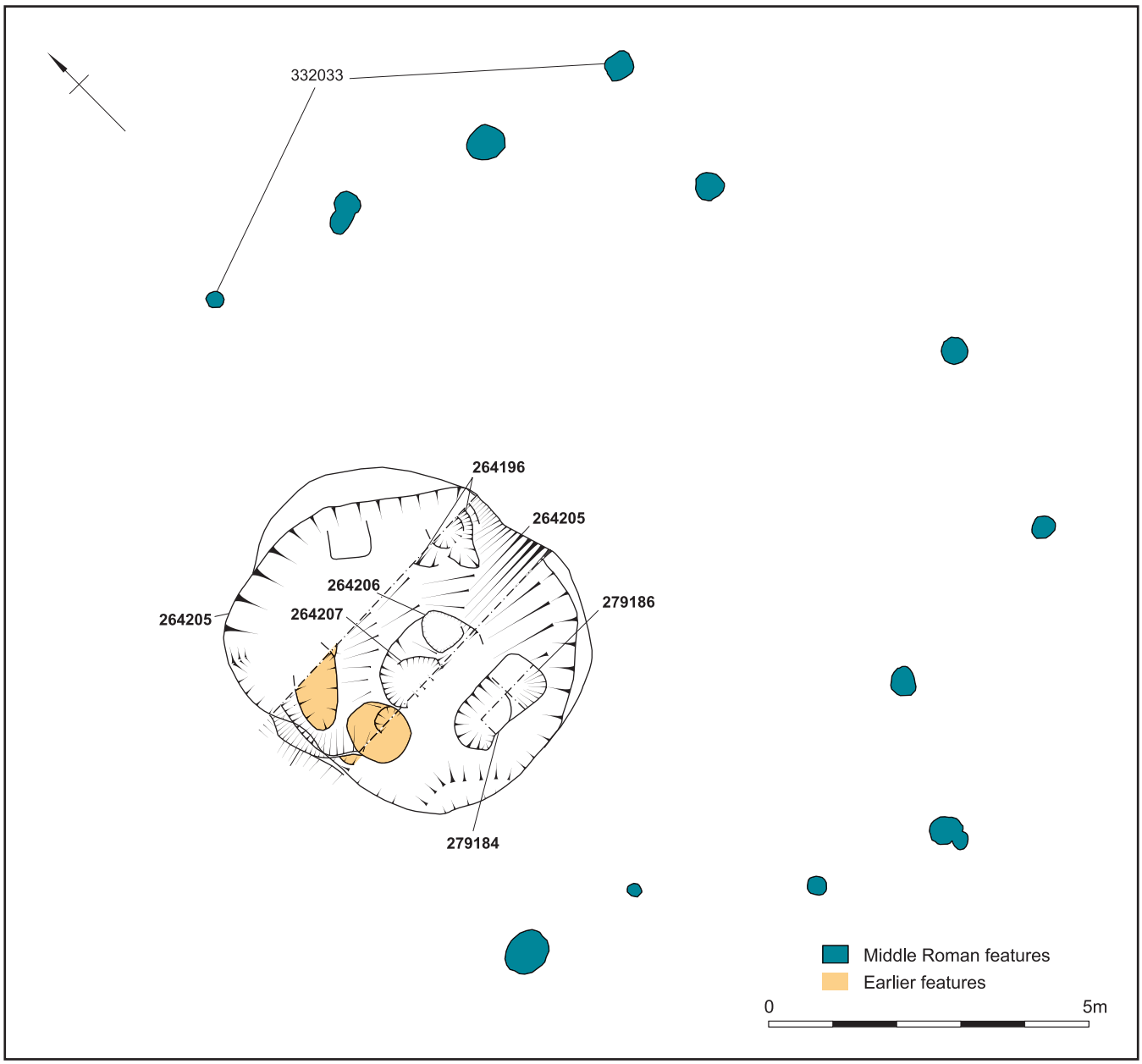


Fig 4.12 Plan of middle Roman sunken-featured building 170168 (Zone 6)

quantities of animal bone, middle Roman pottery, and occasional tile fragments and marine shells.

Enclosure 16

To the south of enclosure 15 an L-shaped ditch, 190484, enclosed an area containing a large feature interpreted as a quarry pit. The pit, 216097, measured 4.8m long and up to 0.96m deep, and had been backfilled with domestic waste.

In the north of the enclosure was an isolated inhumation burial 132157 in grave 132156, which cut early Roman enclosure ditch 170032, but was otherwise dated to the middle Roman period on the basis of a sherd of pottery.

Grave catalogue

Grave 132156 (Burial 132157)

Not illus

Grave: NE–SW, ovoid with vertical sides to flat base – 2.24 x 0.57m, 0.08m deep. Fill of dark grey brown silty clay loam with burnt flint, chalk and charcoal flecks.

Human remains: Burial supine with legs extended and head to NE. Skeletal recovery *c* 50%. Adult *c* 40–45 yr. Male.

No grave goods.

Enclosure 17

On the west side of the south-west branch of the trackway, immediately to the south of where they split, was a rectangular ditched enclosure, the first phase of which was represented by ditch 170098, which was near continuous, but with a 7.3m wide entrance on the northern side. The enclosure measured 24m by 17.7m. In the later phase ditch 170098 was replaced by 170099, a slightly larger ditch approximately 1.5m wide and up to 0.8m deep, and the area enclosed was slightly smaller (21m by 14m), and the entrance narrowed to 2.3m. The enclosure was devoid of any features likely to have been contemporary with either phase of ditch.

South of the enclosure and within an area bounded to the east and south by L-shaped ditch 190454 was

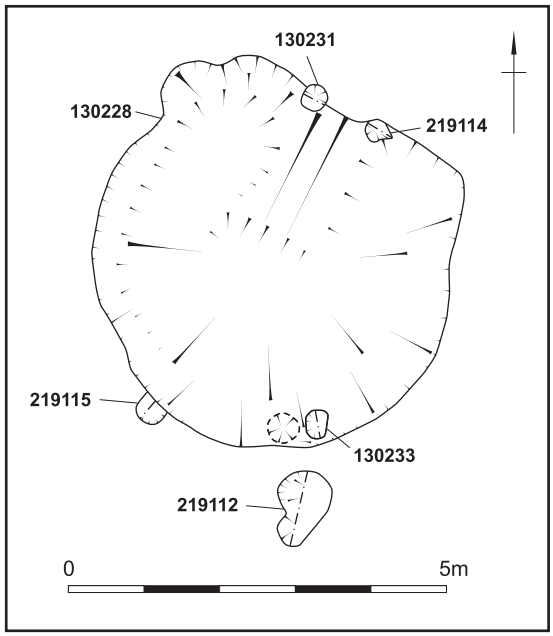


Fig 4.13 Plan of middle Roman sunken-featured building 130227 (Zone 6)

Pl 4.4 Late Roman well 170167, showing upper lining (Zone 6; view from west)

another sunken-featured building (130227). This example measured 4.95m by 4.4m and had a maximum depth of 0.58m (Fig 4.13). The building was sub-rectangular in plan with a flat base and had a ramp on the northern side with two postholes at its northern end. Additional postholes were present on the southern side, but were located slightly further apart. In addition to pottery and bone a conical fired clay spindle whorl (ON 3900) and small fragment of shale bracelet (ON 3901) were recovered from the fills.

Enclosure 18

To the west, within the area enclosed by U-shaped ditch 170150, which defined the southern edges of the two branches of the trackway, were two wells (Fig 4.11). These were situated around 6m apart and the more northerly, 153123, was sub-circular with a maximum width of 5m, but narrowing rapidly with depth. The well was reduced by machine to a depth of 2.5m, although not bottomed, after hand excavation of the upper fills which retrieved a copper alloy needle (ON 3886) and a residual flat linear 1 potin (ON 3972) amongst some pottery and animal bone. Well 153123 appears to have had a lining of organic material, most probably timber, but nothing survived and there were no waterlogged deposits. The southern well, 170167, was circular, and the upper part had been carefully lined with a mixture of flint nodules, sandstone blocks and fragments of recycled quern stone (ON 3378, 3379, 4487 and 4505) (Pl 4.4). This well was also reduced by machine after initial hand excavation, the construction cut at approximately 3m wide proving much larger than the shaft, which was only 1m in diameter. No lining survived, but in this case it may have been of wattle, based on the somewhat contorted nature of the collapsed shaft. The depth of the shaft was not ascertained but it was greater than 3m, though again no waterlogged deposits were encountered. Well 170167 produced moderate quantities of middle Roman pottery, animal bone and shell.

Settlement boundary

To the south of the enclosures the boundary ditch was recut, at first by ditch 190450 and later by ditch 190449 (Fig 4.9). Neither of these ditches extended fully across the excavation area and both terminated to the west, possibly forming a wide entrance in this area. It appears that the south-west branch of the trackway extended as far as the western part of this entrance, providing access to the open ground to the south which sloped up towards Ebbsfleet Hill.

Late Roman

There was considerably less evidence for activity within the zone during the late Roman period (Fig 4.14). The southern settlement boundary may have gone out of use, to be replaced by a smaller but similarly aligned ditch to the north, perhaps indicating that the settlement contracted. A NE–SW aligned ditch towards the north of the zone delineated the extent of other features of this phase, with the exception of an isolated well, and a few inhumation burials. The large enclosed areas of the previous phases virtually disappeared, although sunken-featured buildings continued to be used.

In the north of the zone a cluster of four inhumation burials were generally poorly dated, although one contained pottery with a late 3rd to 4th century date. The burials all shared a similar alignment, and were located in an area measuring around 14m by 12m.

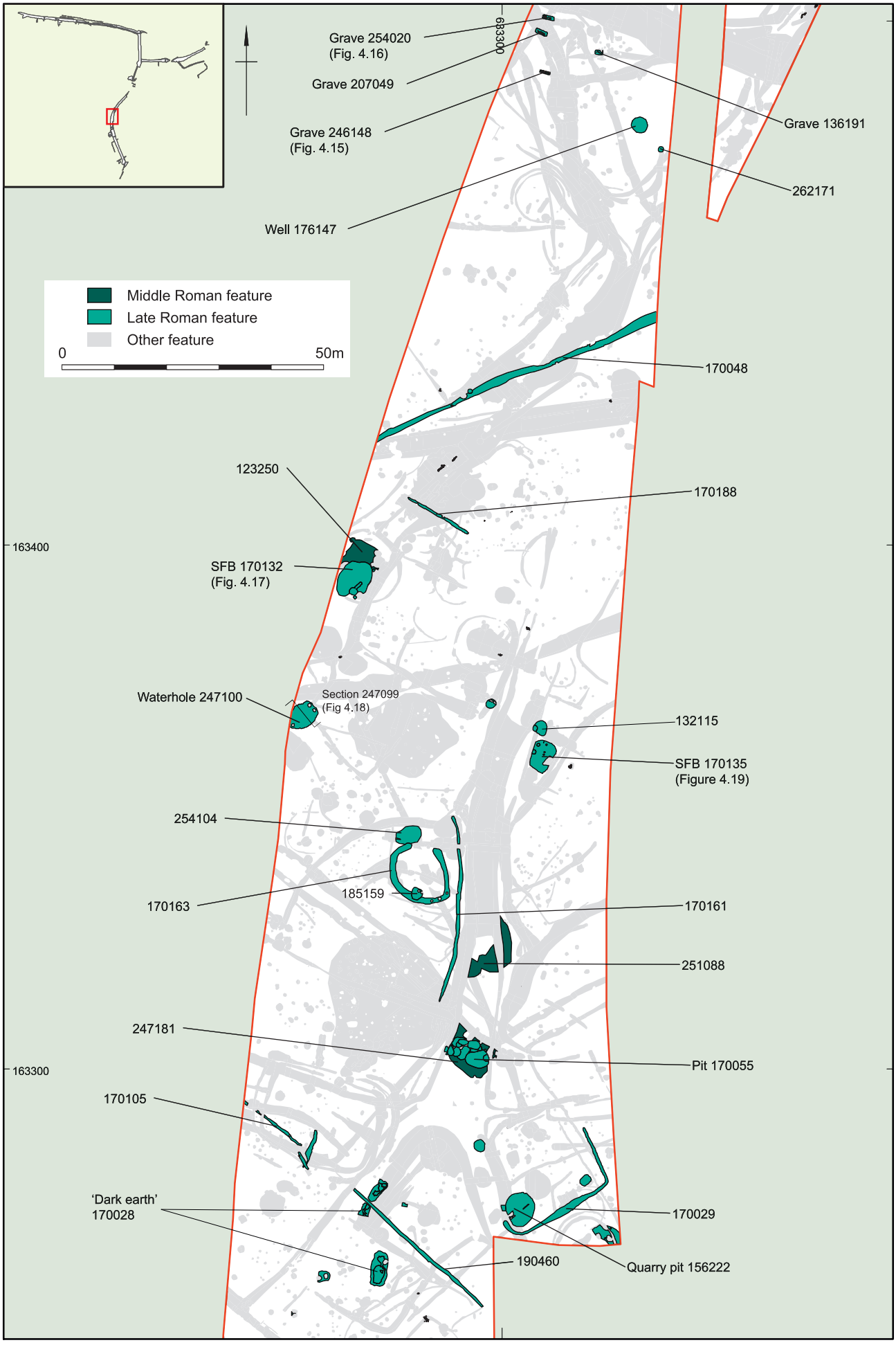
Grave catalogue

Grave 136191 (Burial 136192)

Not illus

Grave: W–E, sub-rectangular, sides and base irregular and unclear – 1.3 x 0.48m, 0.04m deep. Fill of gravel rich mid-greyish brown sandy silt. Two nails may be remnant of coffin. *Human remains:* supine extended with skull to east. Skeletal recovery *c* 2%. Adult >35 yr. ?Male.

Fig 4.14 (opposite) Plan of late Roman features in Zone 6


Grave 254020
(Fig. 4.16)
Grave 207049
Grave 246148
(Fig. 4.15)
683300
Grave 136191
262171
Well 176147
Middle Roman feature
Late Roman feature
Other feature
0
50m
170048
123250
170188
163400
SFB 170132
(Fig. 4.17)
Waterhole 247100
Section 247099
(Fig 4.18)
132115
SFB 170135
(Figure 4.19)
254104
185159
170163
170161
251088
247181
Pit 170055
163300
170105
'Dark earth'
170028
170029
190460
Quarry pit 156222

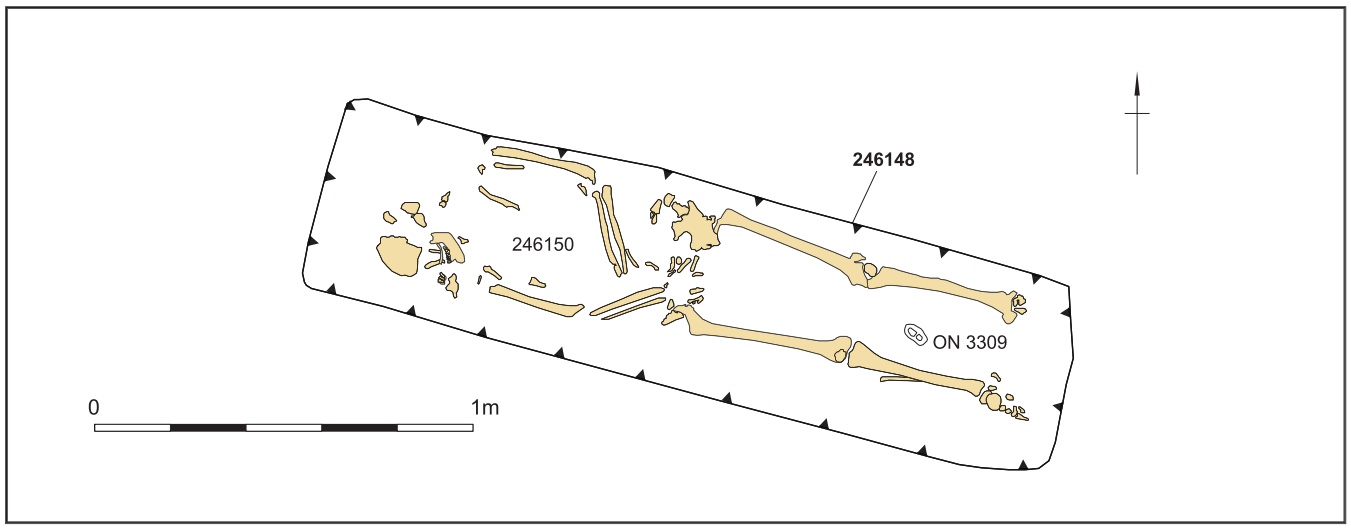


Fig 4.15 Plan of late Roman grave 246148 (Zone 6)

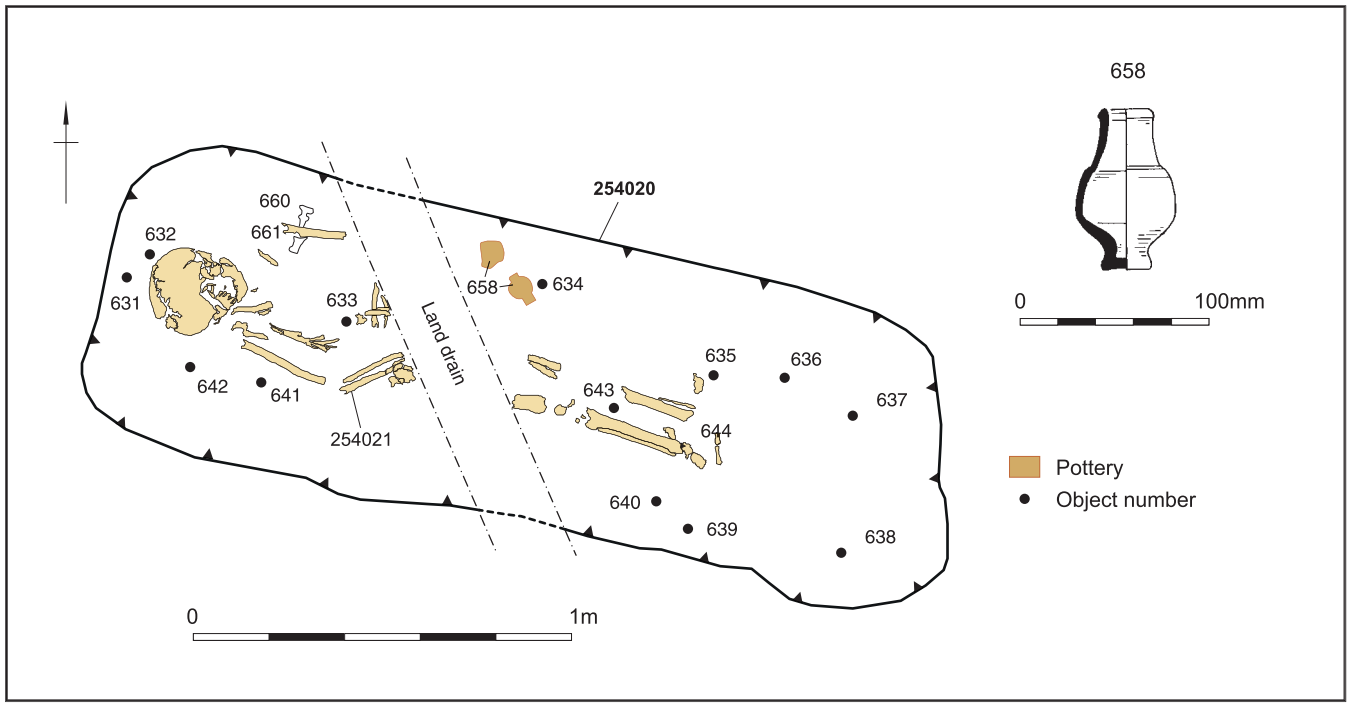


Fig 4.16 Plan of late Roman grave 254020 (Zone 6)

Grave 207049 (Burial 207051)
Not illus
Grave: WNW–ESE, rectangular, with vertical sides to flat base – 2.45 x 0.86m, 0.29m deep. Fill of dark brown sandy clay loam.
Human remains: Supine extended with skull to west. Skeletal recovery *c* 25%. Adult *c* 18–30 yr, ?Male.

Grave 246148 (Burial 246150)
Fig 4.15
Grave: WNW–ESE, rectangular, with vertical sides to flat base – 2.04 x 0.51m, 0.25m deep. Fill of dark brownish grey clay silt with orange clay and greenish yellow sand patches.
Human remains: Supine extended with skull to west. Skeletal recovery *c* 60%. Adult *c* 18–25 yr. Male.
Grave goods: ON 3309. Harness buckle between lower legs, Fe.

Grave 254020 (Burial 254021)
Fig 4.16
Grave: WNW–ESE, sub-rectangular with vertical sides to concave base – 2.24 x 0.75m, 0.18m deep. Fill of dark grey brown sandy clay with patches of black, possibly from coffin as evidenced by numerous nails.
Human remains: Supine extended, skull to west, facing south. Skeletal recovery *c* 40%. subadult-adult *c* 16–20 yr. ?Male.
Grave goods:
ON 631: Bar, Fe.
ON 632–644: Nails, Fe.
ON 658: Oxfordshire colour-coated ware beaker (Young 1977, type C22 or C102), Probably late 4th century AD. Capacity *c* 70ml. Worn, base chipped. Context 254021.
ON 660–661: Nails, Fe.

A well (176147) was situated around 15m south-east of the cemetery. The well, which was circular, had a diameter of 3.1m and had probably originally been lined with roughly hewn chalk blocks and flint nodules, although these had largely been robbed. After hand excavation of the upper fills the feature was augered to a depth of 5.7m. No waterlogged remains were encoun-

tered, however. Amongst residual Iron Age and earlier Roman pottery three of the upper fills contained material of late Roman date.

Around 35m to the south there was a NE–SW aligned ditch (170048) that cut all other features in its course, and seemingly defined the northern limit of settlement during this phase. The ditch was fairly slight, measuring up to 1.4m wide with a concave profile and an average depth of 0.3m. To the south was an open area containing two sunken-featured buildings, a waterhole, a few small pits, and a short length of ditch.

The northern building (170132) was situated adjacent to the western limit of the zone and was of slightly irregular ovoid form, measuring 7.9m by 5.6m and 0.64m deep (Fig 4.17). A shallow, stepped hollow located just south-east of the building may be indicative of the entrance, and several postholes located within the north-east and south-east sides of the subterranean structure were the only remains of roof supports. The building had been allowed to infill partly before the construction of a sub-circular oven (176181) took place (Pl 4.5). The base of the oven chamber measured 1.45m across, and was constructed of closely-packed chalk blocks covered with a thin layer of clay, surrounded by a low wall of clay which had survived to a height of 0.18m. The clay wall had an opening on the north-east side where an elongated stokehole extended for 1.6m and was up to 0.5m wide. It seems probable that the oven would originally have had a domed roof and may have been for baking bread. The oven appeared to have been demolished, and the stokehole blocked up with rubble. Finds from the deposits infilling the sunken-featured building prior to the construction of the oven included part of a copper alloy bracelet (ON 3218) and a rod in the same material (ON 3987). A copper alloy brooch pin (ON 885), an iron socketed projectile point (ON 4094, see Fig 4.120, 1), and a fragment of glass (ON 4033) were recovered from the layers sealing the oven.

A probable waterhole (247100, Figs 4.14, 4.18) was located to the south of the sunken-featured building and measured 6.4m by 4.4m with a depth of 2m; it had stepped edges, which were especially pronounced on the eastern side. After the waterhole went out of use it served as a rubbish pit and relatively large quantities of pottery and animal bone (mainly cattle and sheep/goat) were retrieved from the fills. No waterlogged deposits were present.

The second sunken-featured building (170135) was located around 40m to the east, seemingly 'wedged in' between earlier ditches and buildings, probably deliberately avoiding their softer fills. Sunken-featured building 170135 was sub-rectangular in shape, measuring 5.7m by 4.48m and with a depth of 0.43m (Fig 4.19). Cut into the bottom of the building on its western side was the concave base of a clay-lined oven (246245) 1.1m long and 0.5m wide. The oven base, which was 0.29m deep, contained fired clay fragments from the collapsed oven superstructure. The infill of the building contained moderately large quantities of domestic refuse, including animal bone, pottery sherds and tile fragments.

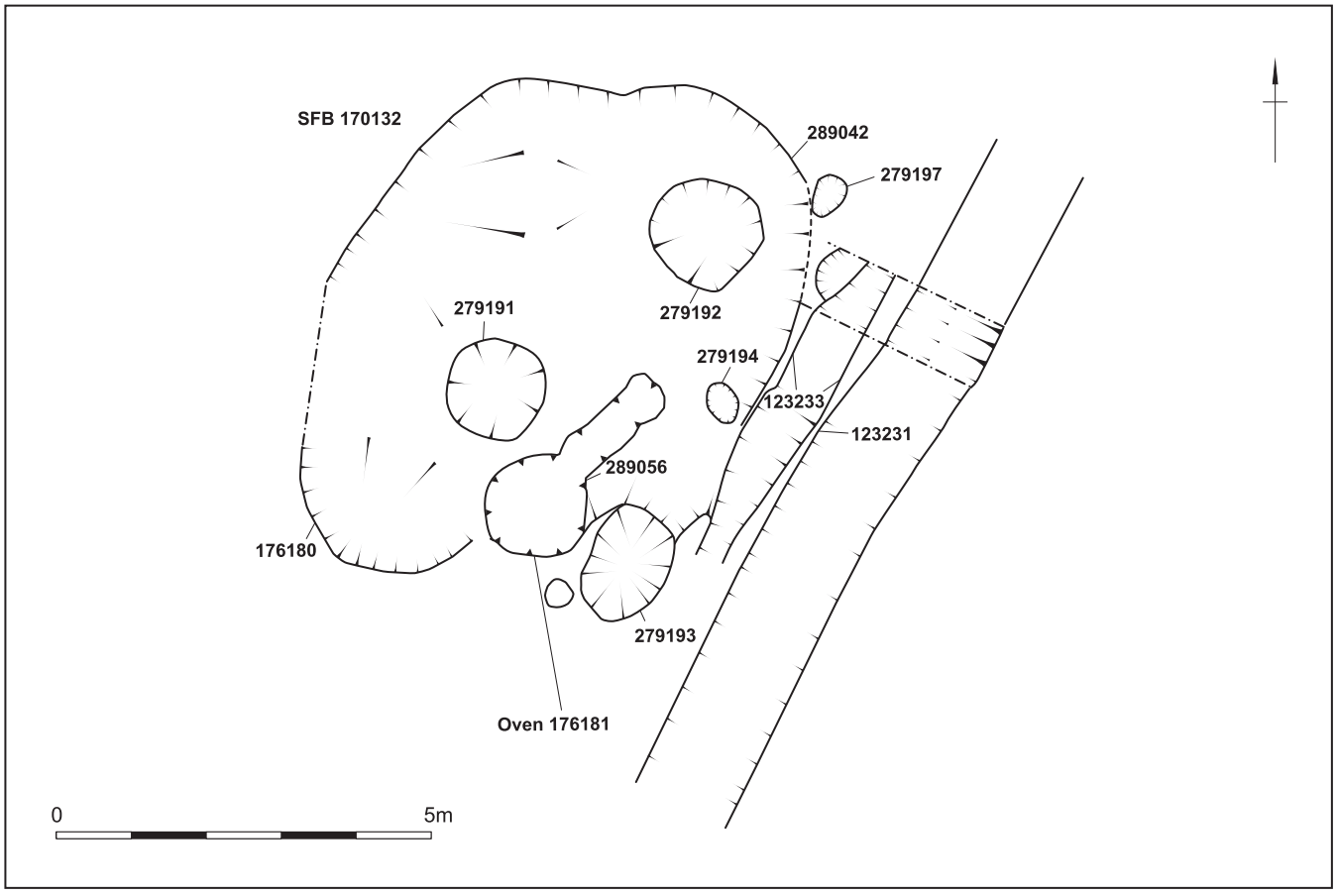


Fig 4.17 Plan of late Roman sunken-featured building 170132 (Zone 6)

Pl 4.5 Oven 176181 in late Roman sunken-featured building 170132 (Zone 6; view from north)

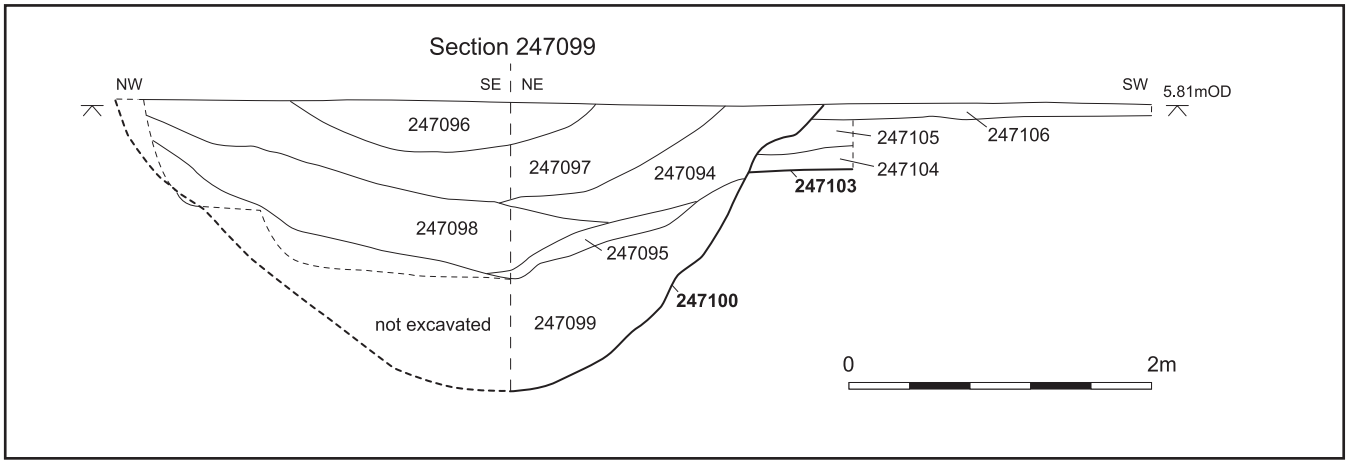


Fig 4.18 Section of late Roman waterhole 247100 (Zone 6)

Further to the south a small penannular enclosure (170163) was defined by a relatively wide ditch, and had an entrance about 4m wide on the northern side. The ditch had a maximum width of 1.35m and a depth of 0.86m, and the enclosure seems likely to have served as an animal corral. A substantial rubbish pit (254104) was situated on the western side of the enclosure entrance and contained large amounts of late Roman pottery sherds, generally in a fairly abraded condition.

To the east of the enclosure a slightly curving ditch (170161), 0.75m wide and 0.5m deep, containing abundant pottery including sherds of late Roman date, followed the western edge of the trackway of the previous phase. However, the track itself appears to have gone out of use, and a series of pits was cut across the southern end flanking ditches. No finds were recovered from the pits, with the exception of pit 170055, which contained a single sherd of late Roman pottery, and a copper alloy coin (ON 990139) of the House of Valentinian dating to AD 364–378.

Towards the south-east were a few scattered pits within an area partially enclosed by an L-shaped ditch (170029). Ditch 170029 appears to have respected the layout of earlier ditch 190484 (see above) and perhaps represents a later extension or modification to what may have been a still partly extant feature, possibly to form a sub-rectangular enclosure. To the west of the area enclosed by the ditch was a large pit, possibly a quarry

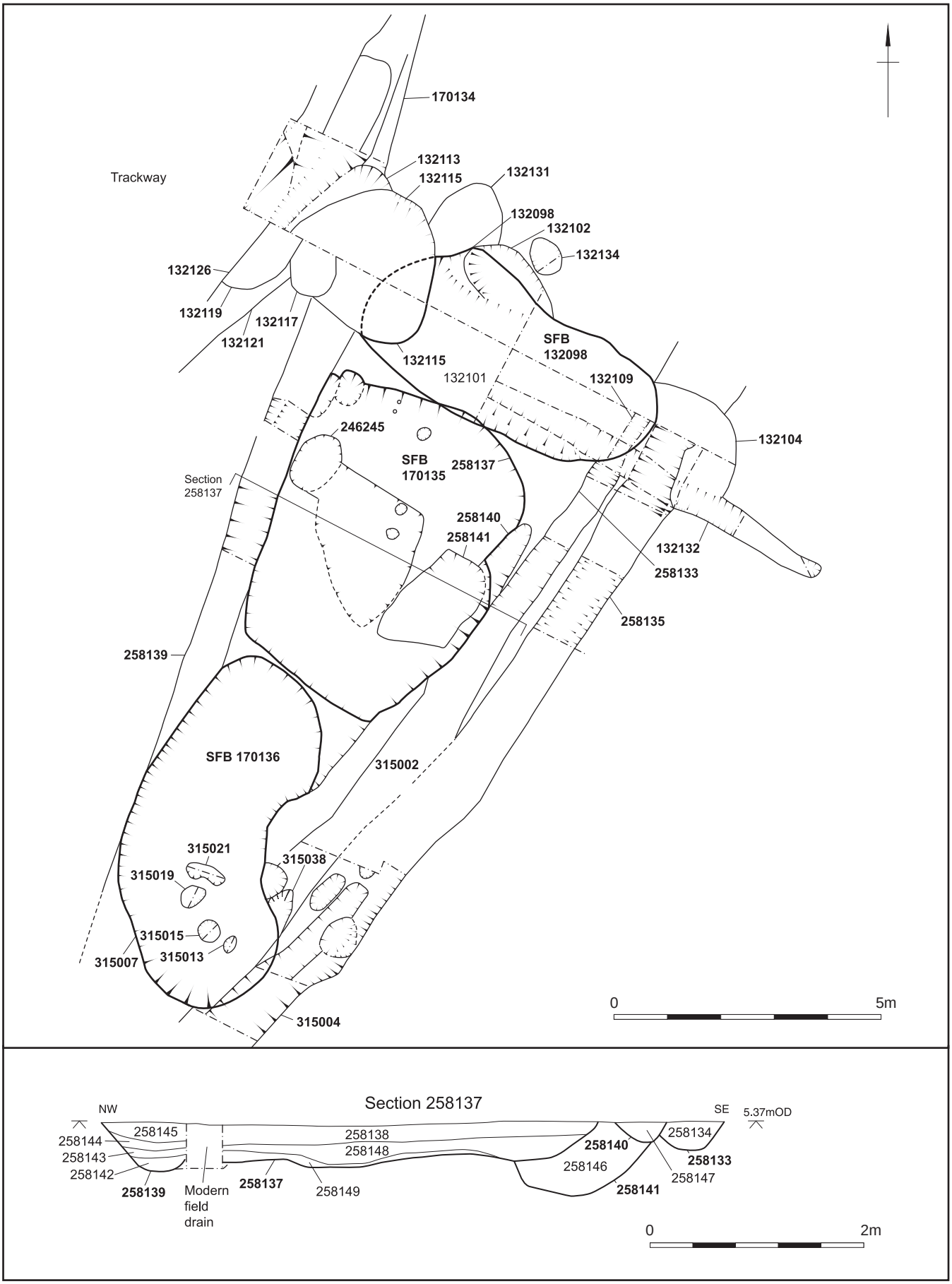


Fig 4.19 Plan and section of late Roman sunken-featured buildings 132098, 170135 and 170136 (Zone 6)

pit (156222), adjacent to a similar feature (216097) of the previous phase (see Fig 4.11). Quarry 156222 was 4.45m long and 1.15m deep, and had been infilled with pottery and some animal bone. The pottery, mostly of middle–late Roman date, included a single possible early Saxon sherd (see below, and Vol 2, Cotter, Chap 10).

The settlement of this phase was bounded to the south by ditches 190460 and 170105 which ran in a NW–SE direction, parallel to and north of the former boundary which was not recut during this phase. The gap between the ditches measured around 11m, and this may have defined an entrance. However the ditches were very shallow, especially the western segment (170105) which in places was only 0.04m deep, so the absence of a ditch in the central section may easily have been a result of truncation.

Zones 7 and 8

Late Iron Age and early Roman

At the extreme south of Zone 7 ditches 262181 and 178385 (see Fig 3.33) probably bounded the western edge of a successor of Iron Age trackway 262210/287046. This approximate trackway alignment seems to have been perpetuated into the middle Roman period (see Fig 4.9) but was clearly interrupted by two phases of major ditch digging, roughly in the middle of the 1st centuries BC and AD (see Chap 3, and Zone 6 above). Possible interpretations of this development, and how the survival of the trackway alignment can be reconciled with the evidence for its disruption on a massive scale, are discussed under the early Roman period below.

A little further north a shallow sub-rectangular pit or depression in the south-western part of Zone 7 was situated within the area of Late Bronze Age activity (see Chap 3). The pit itself (274022) was undated, but within the base of the feature a series of stakeholes (274025), possibly structural, yielded two pottery sherds of Late Iron Age or early Roman date.

Further north again in Zone 7 ditch 201101 ran in a north-westerly direction from the eastern limit of excavation, before turning to the north-east (Fig 4.20). It cut trackway ditches 201100 and 201099 of Middle or Late Iron Age date, and several of the trackway and field boundary ditches of probable Middle Bronze Age date. The nature of the space enclosed by ditch 201101 is uncertain, but just to the north a complex group of NNW–SSE aligned features including trackway ditches 159250, 159251 and feature 193096 recut the trackways of Middle to Late Iron Age date. Feature 193096, a probable hollow-way, was flat based and up to 12.2m wide and 1.15m deep.

Immediately north-east of the trackway Late Iron Age enclosure ditch 201143 mirrored the form of its predecessor (201137) and lay consistently 5m beyond it, cutting earlier trackway ditches 201147 and 201149 (see Chap 3, Fig 3.35). This would appear to rule out the possibility that ditches 201137 and 201143 were contemporary and perhaps formed part of a double-ditched enclosure. Ditch 201143 was considerably larger than 201137, with a maximum width of 4.3m, a depth of up to 1.56m, and a slightly flared concave profile. The majority of the enclosure which it bounded lay to the east beyond the limit of excavation. The south-western side of the enclosure ditch, within the NNW–SSE aligned complex mentioned above, may have been represented by feature 159250, although as part of the trackway this ditch also extended to the north-west. Enclosure ditch 201143 contained pottery as early in date as the Late Bronze Age, but a few sherds of Late Iron Age or early Roman date were recovered from one of the excavated sections. As with ditch 201137 the northern corner was recut as ditch 201144.

Within the enclosed area, and cutting the fills of earlier enclosure ditch 201137 and trample deposit 201141, a penannular gully (201103) had a diameter of 9.5m, and is interpreted as the drip gully surrounding a roundhouse. The gully was between 0.3m and 0.55m wide with a depth of between 0.09m and 0.3m, and had a steep-sided profile with a concave base. The two terminals of the gully were located to the south, but the gap between them (0.5m) seems too narrow to have formed a functional entrance. Within the area defined by the gully a number of postholes probably held related structural timbers. Only five examples were noted (group 201142) and these varied between 0.47m and 0.22m in width, and 0.38m and 0.1m in depth.

Early Roman

A sequence of ditches aligned NW–SE crossed the southern end of Zone 7. The ditches, 193130, 193131, 193132 and 190360, formed significant boundaries which continued into Zone 6 to the west (see Figs 4.5–6), but the sequence is difficult to reconstruct. The large mid-1st century BC ditch (170082) is presumed to have extended through this area but was not positively identified here – it is possible that there was a break in that ditch at this point; it seems unlikely that the earlier feature (at almost 3m deep in Zone 6) could have been completely obliterated by the later ditches all of which, with the possible exception of 193130, were shallower. The earliest and most southerly ditch was 190360, of which only the southern edge survived later recutting. Ditch 193130, up to 4.2m wide and at least 0.95m deep, was not bottomed, but is thought to have had an eastern terminal within the excavated area 2.5m west of the eastern site baulk and could have been a continuation of ditch 170082. The line of 193130 was then recut by 193131, a wider and perhaps fairly shallow feature which extended across the full width of the excavated transect. This was in turn cut on the northern side by a shallow but broad gully 193132, 0.25–0.40m deep and roughly 1.20m wide, and the area in the vicinity of the possible (now infilled) terminal of 193130 was overlain by a deposit perhaps related to the NNE–WSW trackway alignment. The relationship between the apparently continuous linear features (193131 and 193132) and the possible surface (216074) is not clear, however.

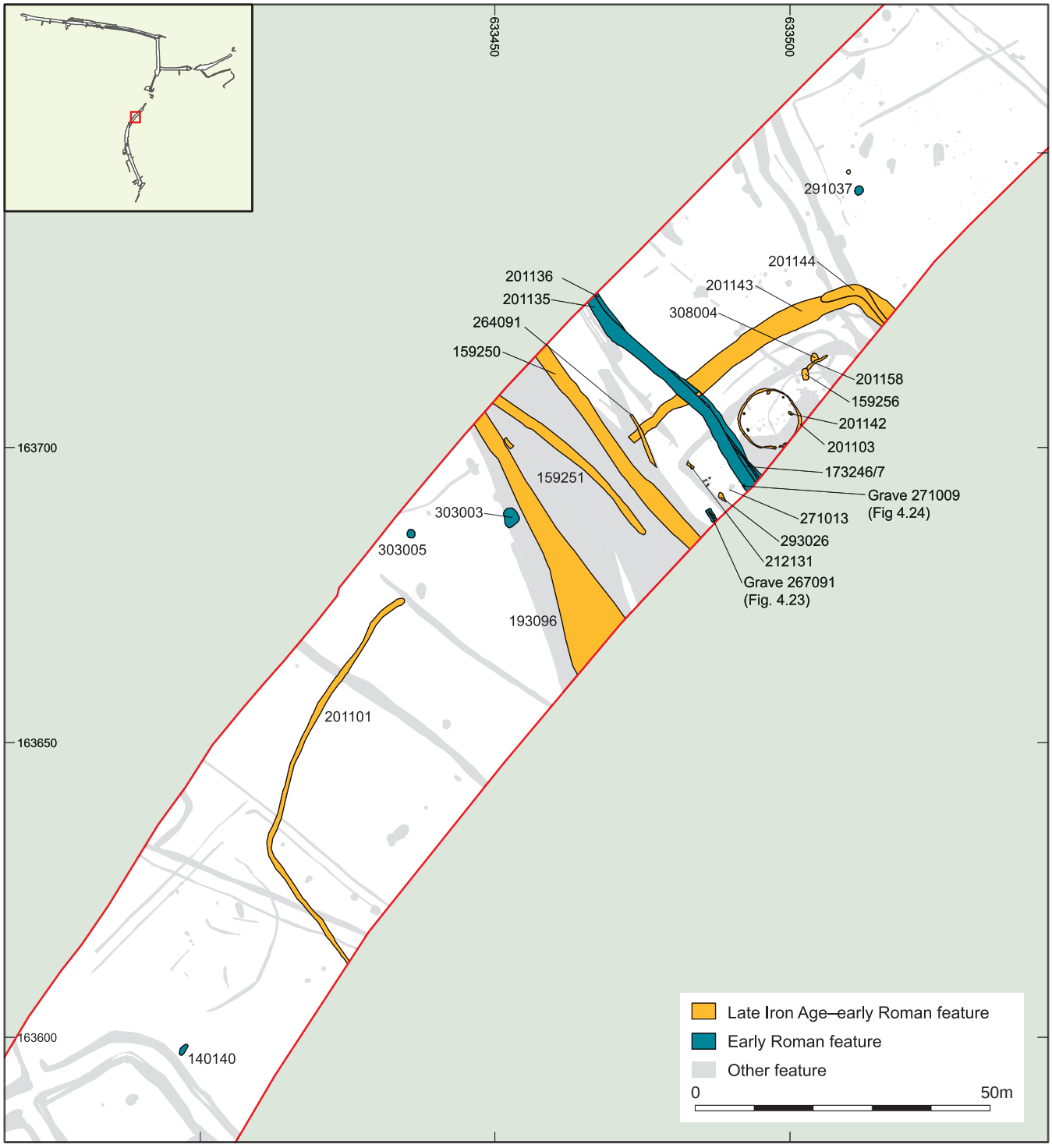


Fig 4.20 Plan of Late Iron Age–early Roman features in central part of Zone 7

The southern terminal of a large ditch (201080) aligned NNE–SSW, one of the earliest of a succession of features on this alignment (*cf* 178385 above), lay around 10m north of ditch 193132 (above). The ditch was up to 4.09m wide and 0.92m deep and had fairly gently sloping sides and a concave base. A smaller ditch (201082) lay to the west and is likely to have been related to 201080. Both ditches contained pottery of generic Roman type, but were cut by ditches of middle Roman date and were presumably earlier than this. Ditch 201090 to the north-east ran at 90° to 201082, and contained a single pottery sherd also of Roman date.

A sequence of at least four NW–SE aligned ditches, of which the latest was ditch 201135, was dated to the early Roman period on the basis of very small but consistent groups of sherds and ran across the entire excavation area just north of the Late Iron Age trackway complex. The ditches cut the Late Iron Age enclosure 201143 (above). Within the southern end of Zone 8, ditches 148103, 165069, 165070, 165063 and 165076 were all undated but ran roughly NW–SE, broadly parallel with 201135 (Figs 4.20–1). Ditch 165069 cut Middle to Late Iron Age trackway ditches 165067 and 165068. This sequence of ditches may, given their proximity, be indica-

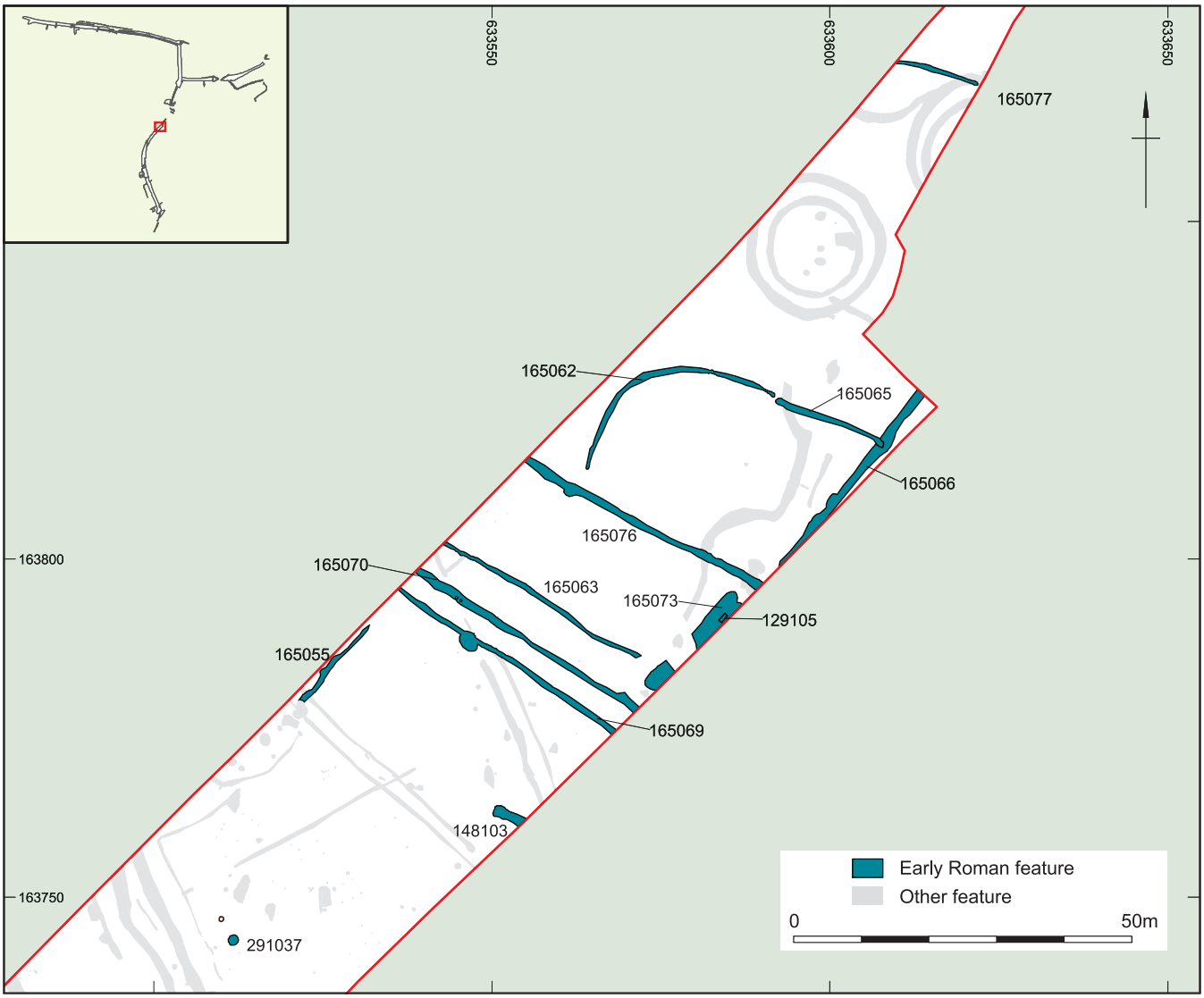


Fig 4.21 Plan of Roman features at north end of Zone 7 and Zone 8

tive of field boundary migration. Ditch 165066, which was almost parallel with the eastern limit of excavation (and its continuation to the south, 129105), contained a single sherd of pottery of middle Roman date, and related curvilinear enclosure ditch 165062 produced a single sherd with a generic Roman date.

Two ditches further north in Zone 8 produced small quantities of Roman pottery (ditch 165077 one sherd of early Roman date and ditch 165061 three sherds of generic Roman date). Both ditches may have been related to the features assigned to the putative field system to the south.

Other features probably of early Roman date are likely to have included pits 242173, 210044, 292023, 212115, 239051 (possibly used for clay extraction), 274015, 140140 and 291037. These do not represent a coherent group, but rather were scattered throughout Zone 7, although more concentrated in the south of the area.

Middle Roman

Ditch 201080 of earlier Roman date was recut by ditch 201079, which followed the line of the former before turning to the west into Zone 6 where, as ditch 170040 (and 201084 within Zone 7), it formed a sub rectangular enclosure (Fig 4.9, E11). These last two ditches contained small quantities of pottery of 2nd- and 3rd-century date, including sherds of Eastern and Central Gaulish samian ware. In the central eastern part of the enclosure (within Zone 7) a vertical-sided well, 178390, had a diameter of 1.15m and was augered to a depth of 4.5m. Large sherds of amphora were recovered from the upper fill.

Parallel to the NW–SE part of ditch 201079, and a few metres to the south-east, was ditch 159247 (Fig 4.9). This cut both the metalled trackway (287046) and the sequence of ditches of early Roman date (193130, 193131 and 193132, Fig 4.6), before terminating to the south within Iron Age ditch 242170. Three pits, 239055 in the south of Zone 7 and 303003 and 303005 in the centre of the zone (for these see Figs 4.9 and 4.20), all contained middle Roman pottery, including sherds of Central Gaulish samian ware.

A group of four inhumation burials lay within the southern part of Zone 7 (Fig 4.9); none were accompanied by grave goods. Grave 297022 was partially cut by ditch 201079 and lay adjacent to grave 150083. Graves 248103 and 297017 were cut into the metalled trackway 287046 (Pl 4.6). A middle Roman date is preferred for these burials, although 297022 appears to have been

Pl 4.6 Roman grave 248103 (Zone 7; view from north-east)

earlier. The burials could possibly be the westernmost examples from a larger cemetery which lay to the east.

Two other burials of certain middle Roman date, an inhumation (267091) and a cremation (271009), were located near the eastern limit of excavation, towards the centre of Zone 7 (Fig 4.20). Cremation burial 271009 had been inserted into the fills of early Roman ditch 201135. A further, unurned cremation burial (179132) was recovered in the same area, salvaged following erosion and collapse of the eastern edge of the excavation; although undated, a middle Roman date is suggested for it.

Grave catalogue

Grave 150083 (Burial 150082)

Not illus

Grave: NE–SW, rectangular diffuse cut with rounded end to north-east. 1.7 x 0.5m, 0.2m deep. Single greyish brown sandy silt fill, occasional small rounded pebbles and small chalk pieces, occasional charcoal flecks.

Human Remains: supine with head to north-east facing east. Right arm and hand extended along right side of body, left arm extended on left side of body with left hand on pelvis. 90% skeletal recovery. Adult >55 yr. Male.

Grave 248103 (Burial 248102)

Fig 4.22, Pl 4.6

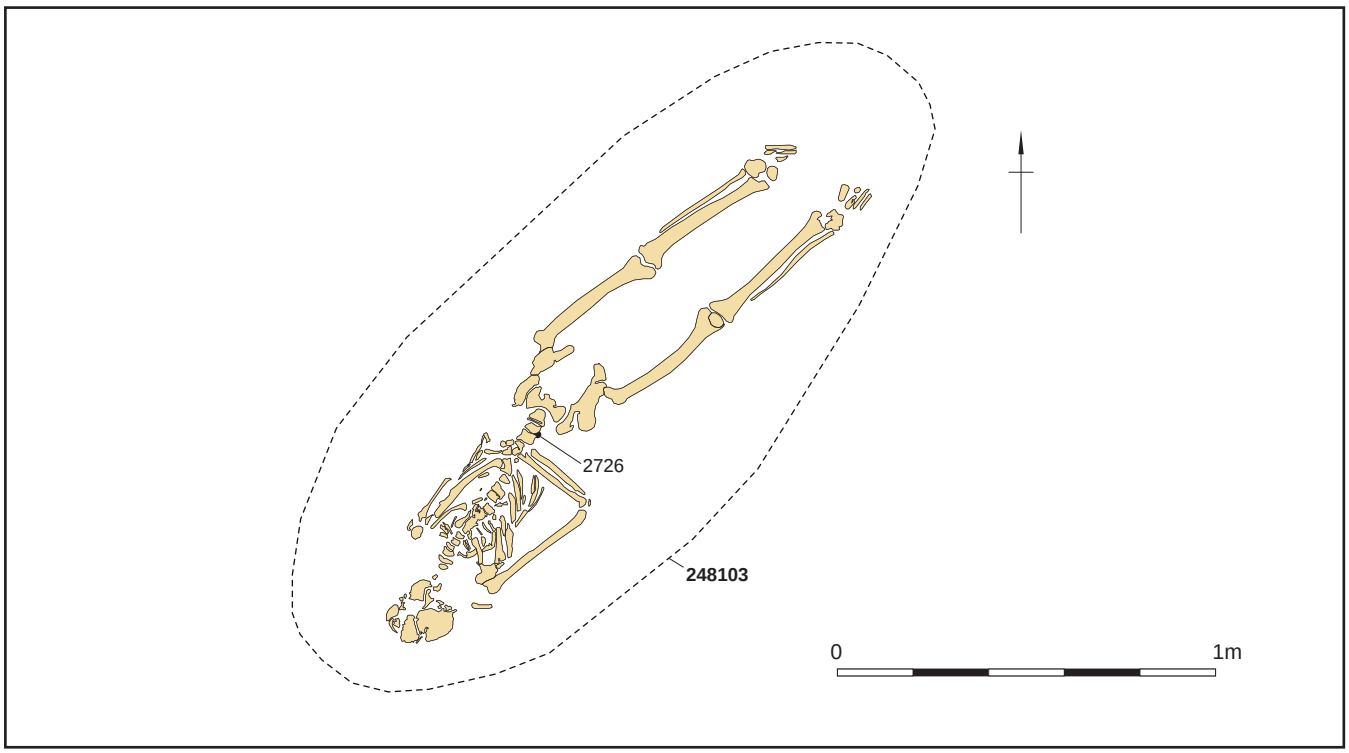
Grave: NE–SW, cut very diffuse and not visible in plan. 1.9x 0.48m, 0.15 m deep. Fill of yellow grey silty sand, occasional flint fragments and small pebbles.

Human Remains: Burial supine with head to south-west, arms folded across chest. Body may have been wrapped in shroud as bones constricted within narrow area. *c* 75% skeletal recovery (left side partly removed through plough damage). Adult *c* 35–45 yr. Female.

Grave goods:

ON 248103: ?Nail, Fe.

Fig 4.22 Plan of middle Roman grave 248103 (Zone 7)



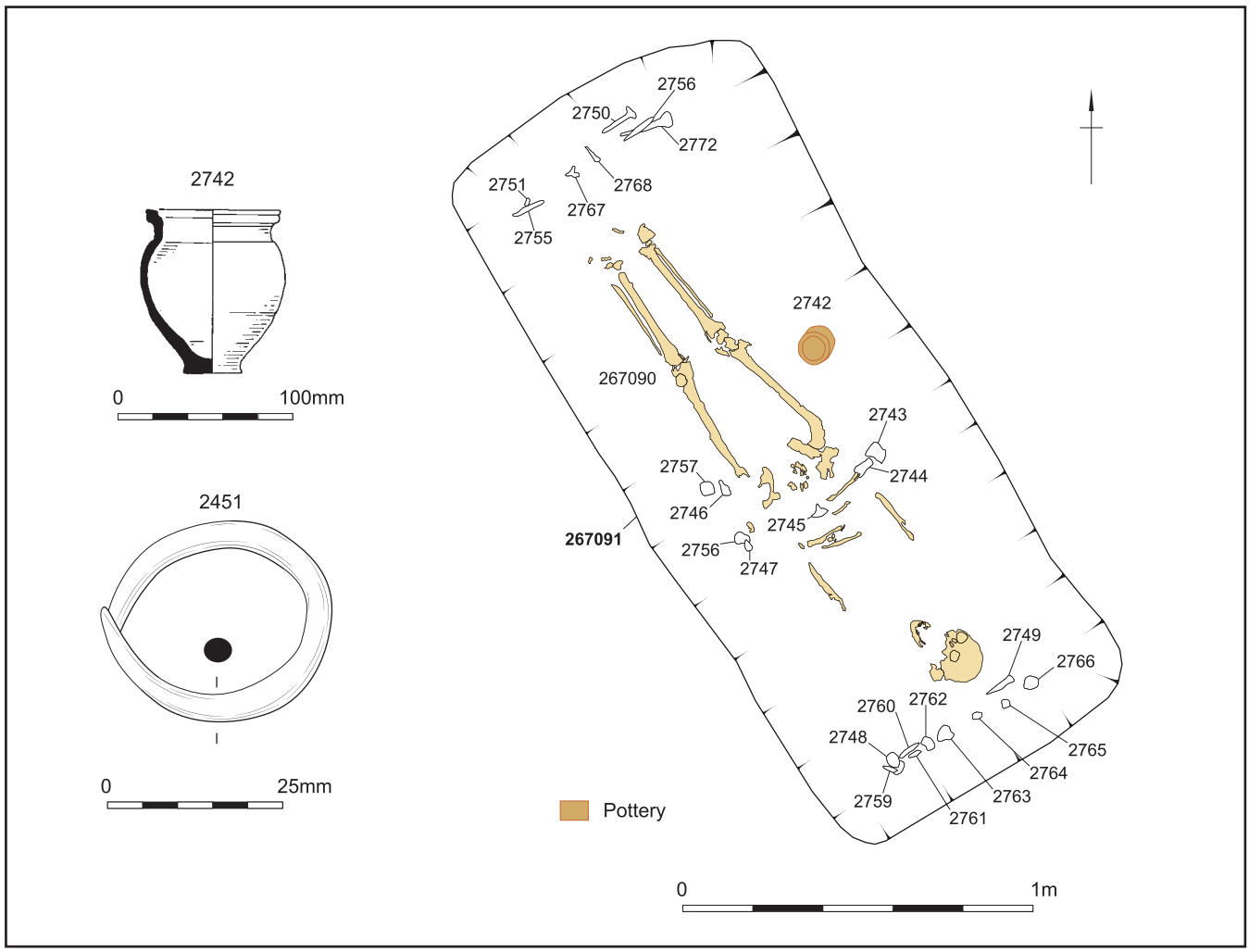


Fig 4.23 Plan of middle Roman grave 267091 (Zone 7)

Grave 267091 (Burial 267090)
Fig 4.23
Grave: NW–SE, rectangular with near vertical sides – 2.25 x 0.85 m, 0.45 m deep. Single mid-brown clay silt fill with occasional rounded flint pebbles. Evidence of organic soil stains from decayed wood of coffin. The remains of 39 iron nails and fitting fragments also indicate a coffin.
Human remains: Burial supine with head to south-east, extended with arms folded over lower chest. *c* 50% skeletal recovery. Adult >40 yr. Male. (Redeposited skull fragments in grave fill from another adult >25 yr).
Grave goods:
ON 2451: Two copper alloy rings, one plain annular, the other formed from a coiled rod with overlapping terminal ends.
ON 2742: Complete oxidised ware beaker/jar with moulded rim, *c* 2nd–3rd century AD. Capacity *c* 200ml. Context 267090. Placed by right femur.

Grave 297017 (Burial 297016)
Not illus
Grave: NE–SW, rectangular, rounded end to south-west. Very dark brown sandy silt fill.
Human remains: semi-crouched lying on right side, feet to south-west. *c* 40% skeletal recovery (truncated from elbows up). Adult *c* 30–40 yr, male.

Grave 297022 (Burial 297021)
Not illus
Grave: NE–SW, rectangular, but narrowing to north-east – 1.6 x 0.6 m, *c* 0.15 m deep. Single mid-brown silty sand fill
Human remains: Burial supine with head to north-east. Right arm extended, hand adjacent to femur. *c* 55% skeletal recovery (left lower arm and leg truncated by later ditch). Adult *c* 30–35 yr. Female.

Cremation burials
Grave 271009 (Burial 271010)
Fig 4.24
Grave: Sub-circular, sides slightly concave, concave base – 0.41 x 0.36m, 0.11m deep. Single black charcoal-rich fine sandy fill. Possibly urned but disturbed, majority of pot in upper level of fill, cremated bone towards base.
Human Remains: 783.7g cremated bone and redeposited pyre debris. 1). Adult *c* 25–35 yr. ?Female. 2). Foetal *c* 7 mth *in utero*.
Grave goods:
Greyware storage jar (Monaghan 1987 type 3D2), ?used as container for the cremated human remains, 2nd–3rd century AD. Context 271010.
ON 4593: Approximately 100 iron nail fragments likely to be hobnails.
ON 4658: 4 fragments of very thin translucent vessel glass exhibiting slight curvature.

Grave/Burial 179132
Not illus
Unurned cremation burial salvaged from eastern edge of excavation following erosion and collapse of section. Dimensions of cut unknown, but remnants of a dark grey/black sandy fill survived.

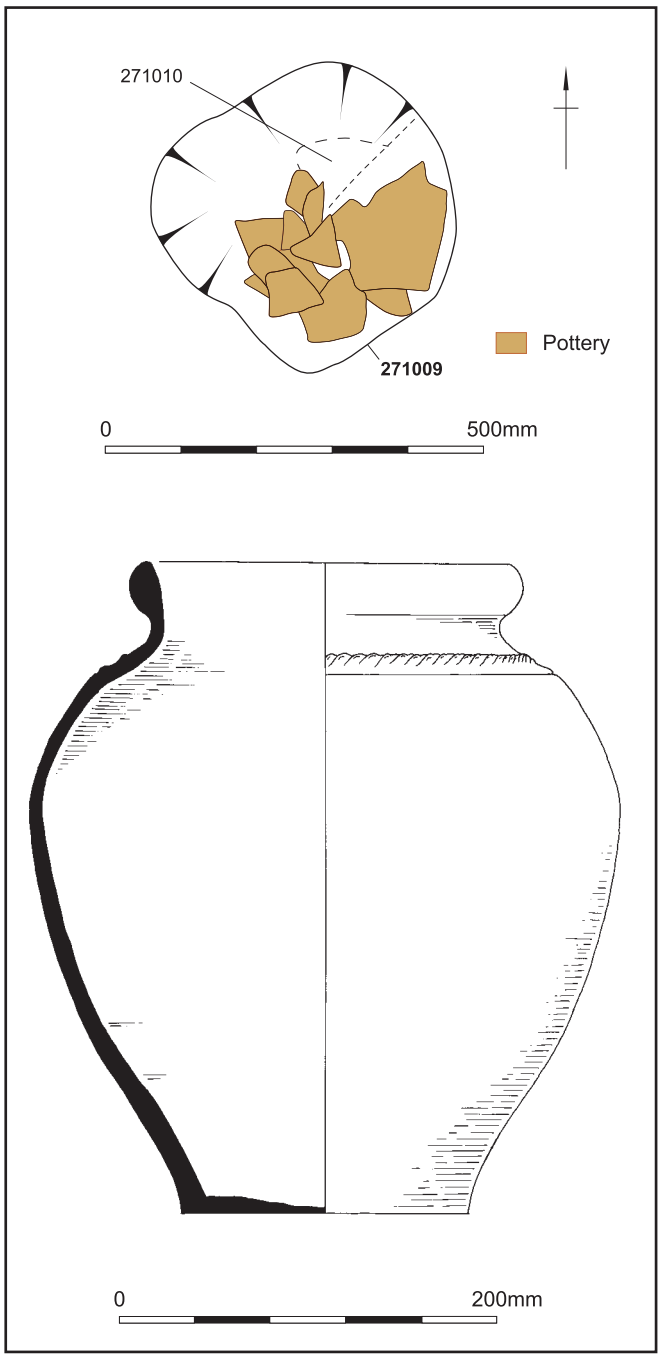


Fig 4.24 Plan of middle Roman cremation burial 271009 (Zone 7)

Human Remains: 179132, 106.8g, adult >45 yr. ?Female.
Grave goods?
Greyware large jar base (at least 220mm in diameter but only 30mm of lower walls surviving; interior surface pitted and abraded), probably 2nd–3rd century AD.

At the base of the slope within Zone 7, adjacent to Ebbsfleet Lane, the archaeological features including ditch 159247 were sealed by a layer of subsoil (201087). This layer was subject to a metal detector survey prior to its careful removal by machine, revealing a dispersed hoard of silver Roman coins. The coins, five denarii, consisted of issues of Vespasian, Nerva, Trajan and Marcus Aurelius, with the last to be minted of Antoninus Pius (AD 155–156). In addition, a potin (probably a Flat Linear 1 type), a complete Greensand upper beehive rotary quern, and 14 associated fragments of an upper millstone (of Millstone Grit) were recovered from within the layer (see below).

Zones 9 and 10

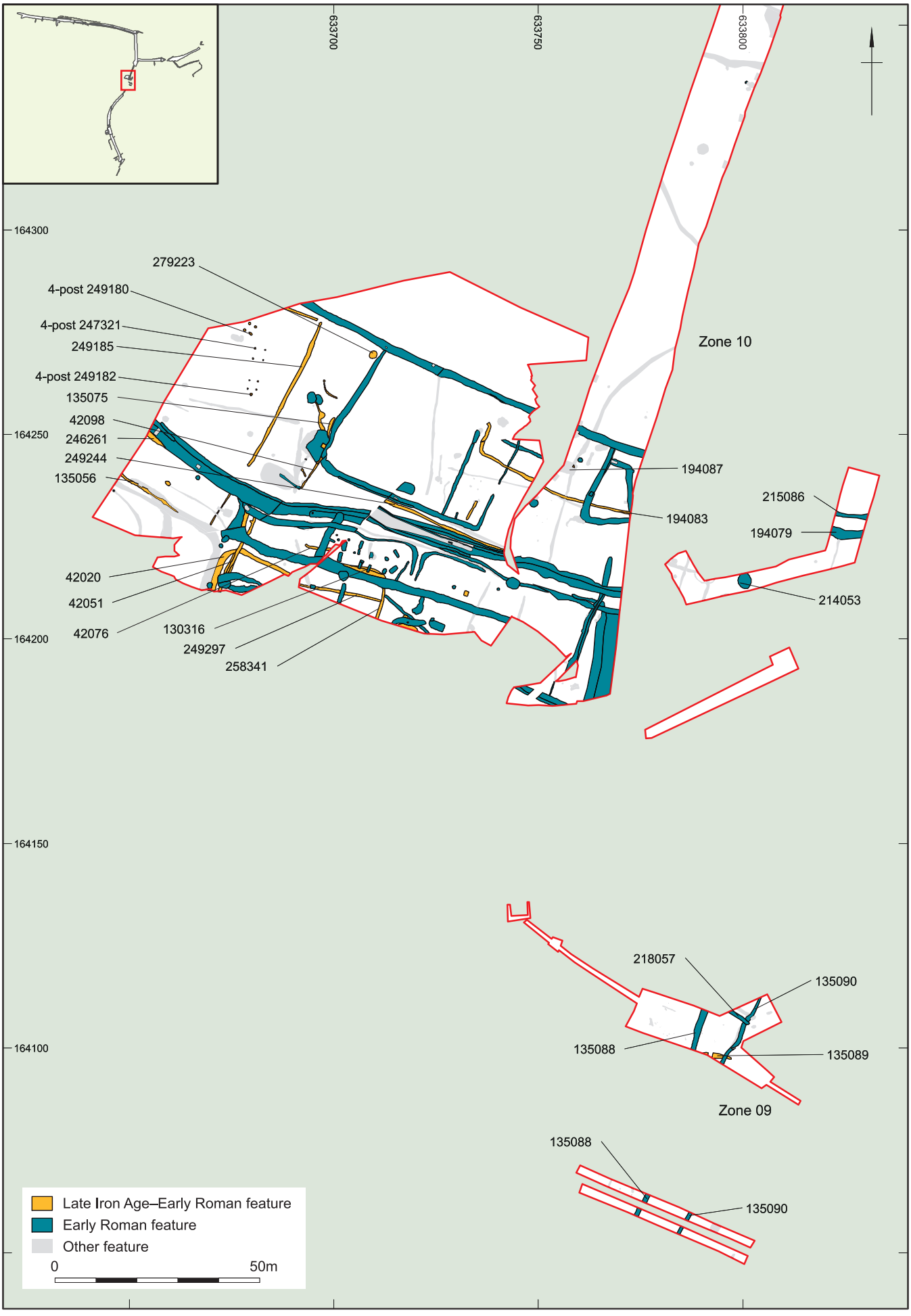
Zone 9 and the southern part of Zone 10 (including that designated as 10a during excavation) occupied a relatively low-lying area to the north of Cottington Hill, with the ground then rising steadily northwards up the slope of Sevenscore towards the chalk ridge. The route of the Weatherlees–Margate–Broadstairs wastewater pipeline lay less than 30m to the east of this area, revealing several Late Iron Age–Roman ditches, although, approximately 200m ENE was a more complex layout of field systems incorporating a NW–SE aligned hollow-way and an adjacent mixed rite cemetery enclosure, with burials from the 2nd century AD onwards (Egging Dinwiddy and Schuster 2009, 9).

Late Iron Age or early Roman

In the southern part of Zone 10 the field system of the Middle–Late Iron Age period (Fig 4.25) was overlain by numerous ditches of Late Iron Age or early Roman date, most aligned WNW–ESE, or at 90° to this.

In the western part of Zone 10, L-shaped ditch 249185 enclosed an area to the south-west within which were various features (Fig 4.25). Four-post structure 249180, the northernmost, had postholes 2m apart, of a slightly larger size than those of its counterparts. Structure 247321 to the south of this measured 2.9m by 2.7m, while structure 249182, the southernmost, also measured 2m square and had another, larger posthole located to the south, possibly to house an additional support. Ditch 135075/42098 lay proximately 15m to the east of ditch 249185 forming part of the same system of boundaries. In the south-west corner of Zone 10, the enclosure ditches of the previous phase were partially recut by ditch 135056, although only a single sherd of Late Iron Age–early Roman date was recovered from this feature, as opposed to over 2kg of Late Iron Age pottery (and eight sherds of flint-tempered pottery of Neolithic date). Ditch 135056 may have formed the southern boundary of a rectangular enclosure measuring 55m by at least 30m and defined to the north and east by ditch 249185, with ditch 246261 being an internal division. Gaps in the ditches on the west side and in the south-east corner may represent entrances, though they may be a result of truncation given the shallow depth of the ditches.

East of the earlier enclosures, in the south of the zone and extending to the south beyond the limit of excavation, there were two further probable enclosures. Ditch 42020, an L-shaped ditch, defined the north-west corner of one enclosure, the west side of which was subsequently modified as gully 42051, recutting an earlier ditch (42047). To the east of this the second, possibly contiguous enclosure was formed by ditch 258341 and with 130316 on the northern side. Ditch 130316 recut an earlier ditch, 130315, but only a short


633700
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4-post 249180
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42098
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249244
135056
42020
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42076
130316
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258341
Zone 10
194087
194083
215086
194079
214053
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Zone 09
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Late Iron Age–Early Roman feature
Early Roman feature
Other feature
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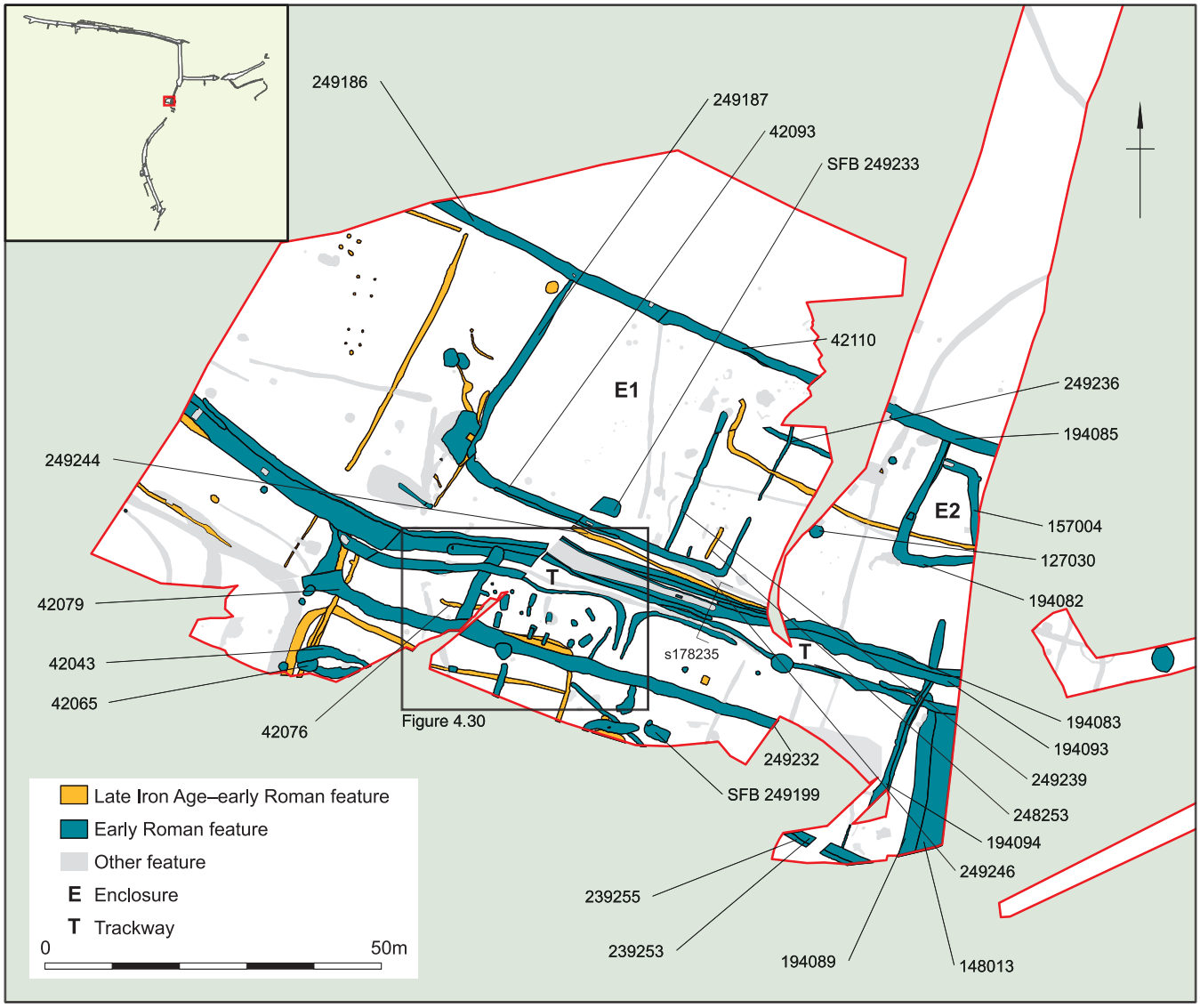


Fig 4.26 Plan of Late Iron Age–early Roman features (Zone 10)

stretch of this remained on the north side of the enclosure. A smaller west–east aligned ditch (249297) formed an internal division.

In the south-eastern part of Zone 10, ditch 194083 cut ditch 194084 of the previous phase. Parallel and to the south, ditch 249244, along with short ditch segments 42076 and 248253 (Fig 4.26), also probably belonged to this phase, as did another short segment of west–east ditch (135089), located within the northern part of Zone 9 to the south.

A single large shallow pit, 279223, was located 15m east of the corner of ditch 249185, and contained a few pottery sherds and some residual struck flint. Within Zone 10, beneath a sunken-featured building of Saxon date (194086, see Chap 5) a smaller pit (194087) contained a single Late Iron Age–early Roman pot sherd and might have belonged to this phase.

The field and enclosure ditches were concentrated at the southern end of the area, but towards the northern end of Zone 10 a substantial linear feature (194104) on a WNW–ESE alignment was assigned to this phase (see Fig 4.40). The feature had gently sloping sides, (slightly stepped on the northern edge), a flat base, and measured 6.45m wide and 1.5m deep (Fig 4.27). The lowest fill contained material of Middle to Late Iron Age date, but also a fragmentary early Roman bow brooch with an oval bow section and partly surviving pin (ON 211). The two upper fills contained a mixture of later Iron Age and also Roman pottery which, where closely datable, was of 1st-century date. The nature of the fills indicates a combination of natural silting and deliberate deposition. Feature 194104 was flanked by two smaller ditches; around 3m to the north ditch 194092 was 0.5m wide and 0.1m deep, and ditch 194103 (about 2m to the south) was 1.1m wide and 0.34m deep. A further ditch (194099, Fig 4.40), which contained pottery of generic Roman date, approached 194103 from the south-west and then cut it and turned to the east on the same alignment. The interpretation of feature 194104 is not certain, but it would have represented a substantial boundary feature. It may perhaps have been a hollow-way, with the parallel ditches originally intended as

Fig 4.25 (opposite) Plan of Late Iron Age–early Roman features (Zones 9 and 10)

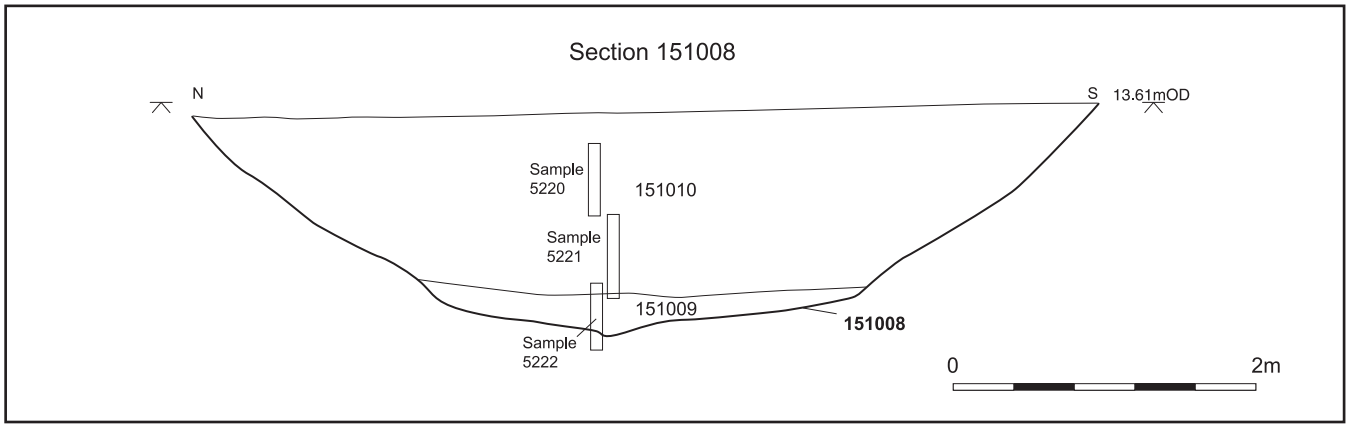


Fig 4.27 Section of Late Iron Age–early Roman hollow-way 194104 (Zone 10)

flanking drainage features, though it seems rather deep for this. However, approximately 200m to the ESE, within the route of the earlier pipeline, was a similarly aligned hollow-way, 4m wide but only 0.25m deep, and also assigned a probable Late Iron Age–early Roman date (Egging Dinwiddy and Schuster 2009, 96–8).

Early Roman

Within the southern part of Zone 10 a series of enclosures was dated to the early Roman period (Fig 4.26). These followed a similar alignment to those of the previous phase, but levels of activity had clearly increased. A major WNW–ESE aligned boundary ditch (249186, 42110 and 194085) crossed the northern part of this area. The ditch, up to 2.2m wide and 1.3m deep, delineated an area of settlement to the south, which included two small sunken-featured buildings and a mixed rite cemetery, set within a series of small enclosures either side of a WNW–ESE trackway. On the rising ground to the north of the boundary ditch was an apparently open area, as had also been the case in the preceding Late Iron Age–early Roman period (see above).

Enclosure 1

Enclosure 1 measured approximately 40m by 30m, its northern side was formed by ditch 249186, and elsewhere it was defined by ditches 249187, 42093/249246 and 249236. There was a 3m-wide entrance in the east-facing side. Ditch 249239 formed an internal subdivision apparently separating the eastern end of the enclosure from the remainder; within the east end an undated four-post structure 248247, assigned to the Iron Age (see Fig 3.37), might equally well have been contemporary with the enclosure.

Sunken-featured building 249233 lay midway along the south side of the enclosure, close to ditch 42093 and aligned to this boundary. It measured 4.1m long (although truncated to the west), 2.4m wide and up to 0.2m deep. Within the building were three large structural postholes, one within the centre of the east edge of the building, with another on the south-western side and one to the north. A cluster of smaller stakeholes was located focused towards the centre of the structure. No finds were recovered from the SFB, and there is a possibility that it was an Anglo-Saxon structure, particularly given the presence of another example (194086) which is certainly of this date 35m or so to the east (see Chap 5).

Enclosure 2

Just over 20m east of enclosure 1 was a small trapezoidal enclosure, sited to the south of boundary ditch 194085. The enclosure, measuring between 4m and 10m wide and approximately 13m long north to south, consisted of ditches 157004 and 194082, both of which contained pottery of mid- to late 1st-century date. The latter feature replaced an earlier ditch (122016) on the same alignment; both were apparently cut by ditch 194085 but did not extend beyond it, and may therefore have been associated with a predecessor of 194085. No features lay within the trapezoidal enclosure, but a notable feature between this and the larger enclosure to the west was pit 127030, which contained over 3kg of late 1st- to early 2nd-century pottery, 18 sherds of briquetage, a fragment of quern stone (ON 4040), and a piece of shale that may represent working waste.

Trackway

South of enclosures 1 and 2 was a complex of mostly small ditches or gullies aligned roughly WNW–ESE (Fig 4.28). Collectively these features extended right across Zone 10, a distance of some 125m, with a slight kink towards the west end. It seems clear that most of the ditches defined various phases of a trackway, unmetalled and approximately 7m wide. The fact that this trackway appears less clear further west probably relates to the frequency of recutting and the difficulty of establishing which ditches or gullies might have been paired, with some possibly representing wheel ruts. The features included 135069, 135070, 194083, 194093 and 178325, the majority of which contained small amounts of pottery of 1st-century date, in addition to a few pieces of animal bone. The final ditch in the sequence, and also the largest (178325), contained a single sherd which post-dated the mid-3rd century AD, apart from which there is little evidence for occupation continuing into the middle Roman period. Long term survival of the boundary may, however, be indicated by the presence of Anglo-Saxon pottery in the uppermost fill, 178338 (see Fig 4.28), though this may simply reflect later material accumulating in what by then was a shallow, linear hollow.

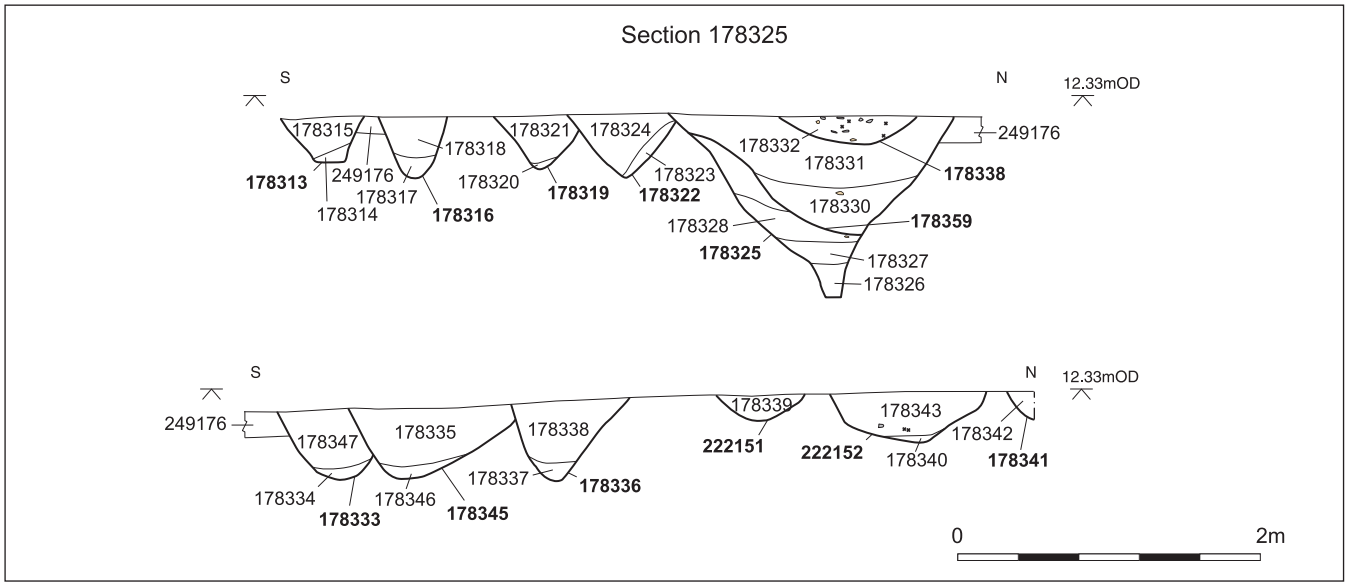


Fig 4.28 Section of Roman enclosure/trackway ditches (Zone 10)

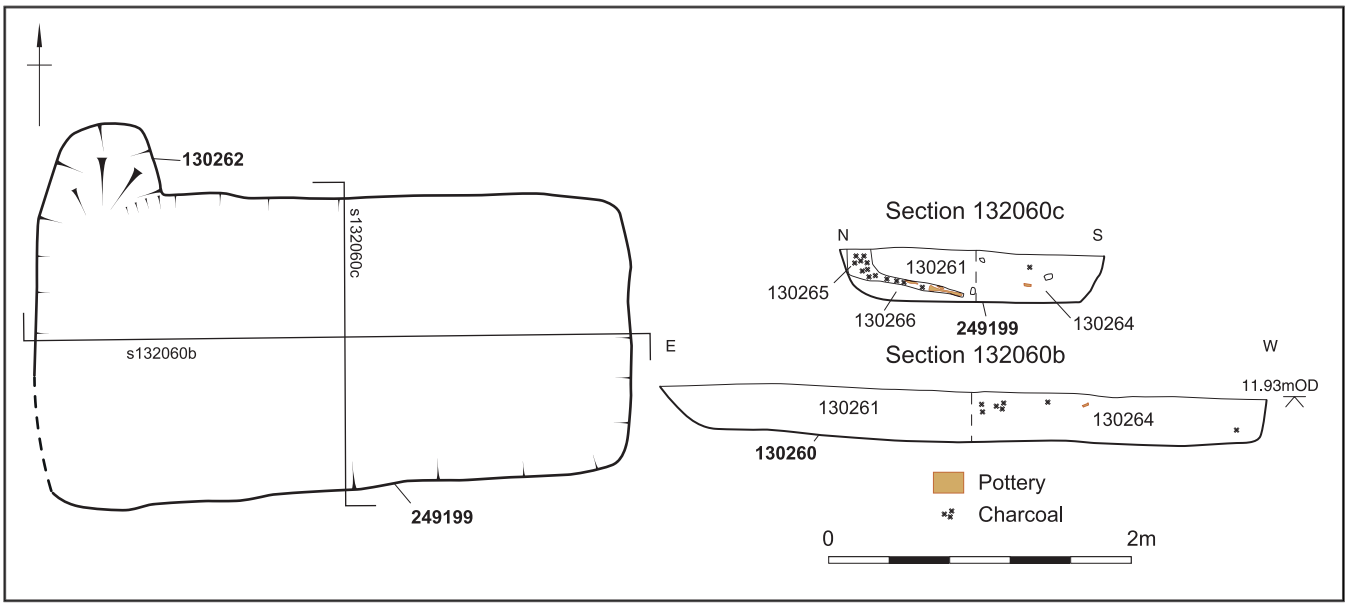


Fig 4.29 Plan and sections of early Roman sunken-featured building 249199 (Zone 10)

Features south of trackway

Some 10m south of the trackway lay a further WNW–ESE aligned boundary ditch (249232, continuing to the west as 42079), which turned to the north at the west end before terminating at the edge of the trackway. This feature, with a total length of 75m, was up to 3m wide but only 0.5m deep, and defined the south side of a series of rather irregular enclosures between it and the trackway to the north, the most significant component within these enclosures being a small cemetery (see below).

South of ditch 249232/242079, in an area not obviously divided up into further enclosures, were scattered features of which the most noteworthy was a sunken-featured building (249199), located near to the southern limit of excavation in Zone 10 (Pl 4.7). The building, which measured 3.8m long and 1.96m wide, had a depth of 0.36m, with an access ramp in the south-west corner (Fig 4.29). No internal postholes were present. Pottery from the excavated quadrants included amphora sherds of early Roman date.

Features to the west of sunken-featured building 249199 included a short length of ditch (249250) extending from the southern baulk in this area and terminating just short of ditch 249232 (Fig 4.30). Dressel 20 amphora sherds recovered from the fill

Pl 4.7 Sunken-featured building 249199 (Zone 10; view from south)

exhibited some evidence of reworking and may be waste from the manufacture of tesserae. Further west again, south of the south-west angle of ditch 249232/42079, and cutting ditches of Iron Age date, an oven (42065) was defined by a discontinuous ring of red fired clay which represented the base of the collapsed superstructure. The oven, 1.2m in diameter, only survived to a depth of 0.15m, and the single fill contained further fired clay fragments and charcoal flecks. Adjacent and to the east of the oven, were a pit and two curvilinear ditches, one of which (42043) contained a quern stone fragment (ON 4781), pottery, animal bone and fragments of human skull. Two more pits (including 42079) were located closer to the south-west angle of ditch 249232/42079, and occasional pits of this period were present elsewhere in the southern part of Zone 10. At the extreme south-east corner of Zone 10 a large north-south aligned ditch (194089), 3m wide and approximately 1m deep, represents a further, recut boundary extending as far north as the trackway.

Cemetery

One of the ditches along the southern margin of the trackway was a slightly irregular ditch (249234), the eastern arm of which curved to the south to enclose an area north of ditch 249232 (above), containing a mixed rite cemetery which was bounded to the west by ditch 42056 (Fig 4.30). The southward part of ditch 249234 was exactly mirrored to the east by ditch 135066, the two ditches appear to have defined an access to the cemetery area from the trackway to the north. The cemetery consisted of eight inhumation burials, two disturbed and re-interred inhumation burials and six cremation burials, one of which was in the base of a grave which contained a single long bone, and another placed on the feet of an inhumation burial. Bone from cremation burial 42001 (see Pl 4.11) was radiocarbon dated to cal AD 130–330 (1795±30 BP, SUERC-40270), indicating a middle/late Roman date, which is corroborated by the ceramic container and accessory vessel that have both been assigned to the middle Roman period.

Three other grave-shaped features (279220, 178354 and 176330) were devoid of burials, and seem unlikely ever to have held them, given the reasonable bone preservation within the adjacent graves. It could be that these were dug, but not used, or alternatively represent cenotaphs. The southern boundary ditch (249232) was cut by a pit (178371) which contained some 1.75kg of early Roman pottery, almost entirely of 1st-century date, including relatively large parts of a small number of vessels. It is perhaps possible that this material derived from cemetery-related features. Another notable

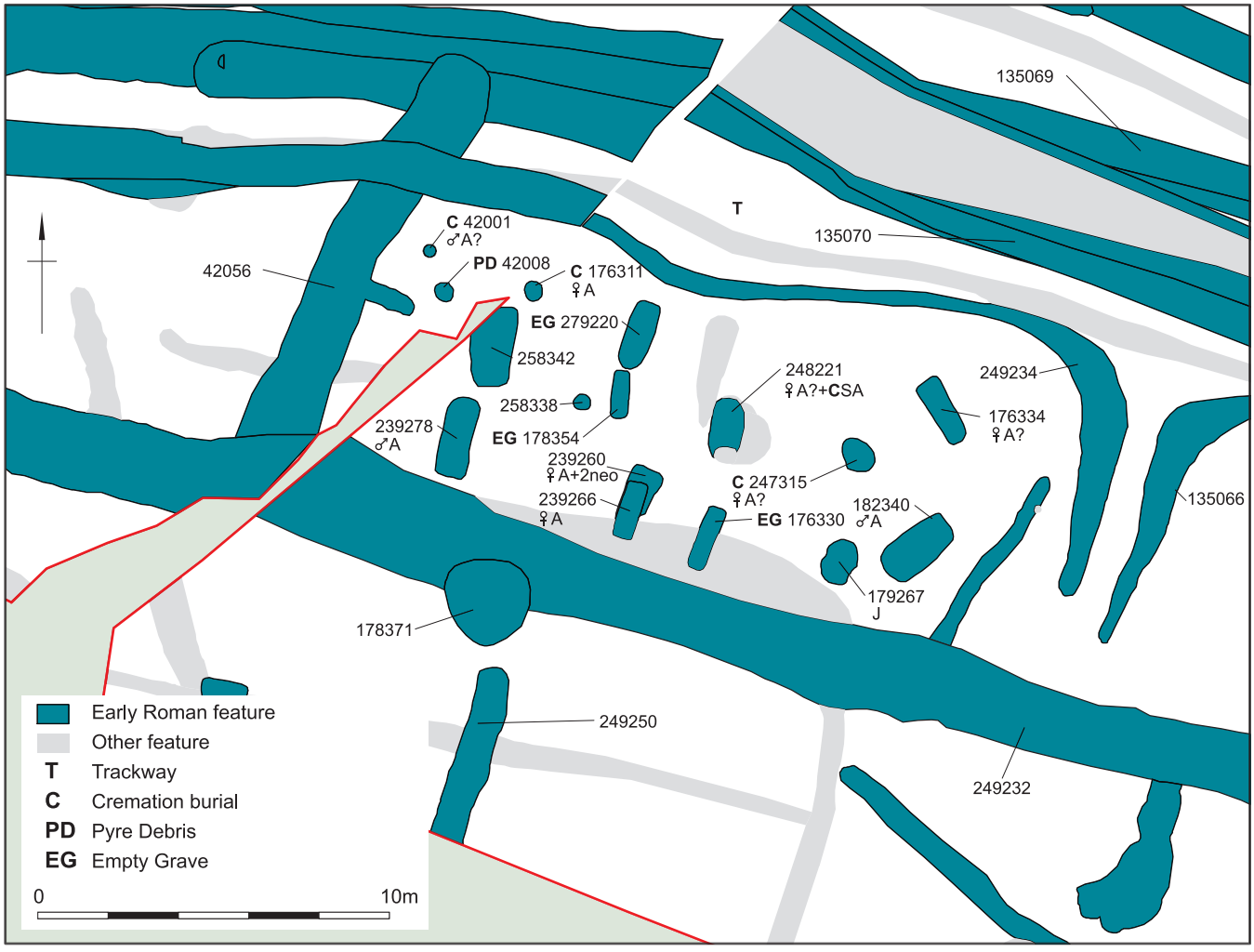
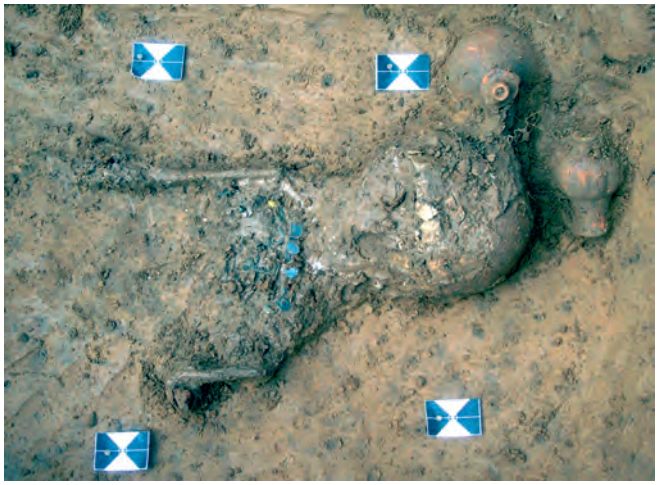


Fig 4.30 Plan of early–middle Roman cemetery (Zone 10)



Pl 4.8 Detail of grave 179267 (Zone 10; view from east)

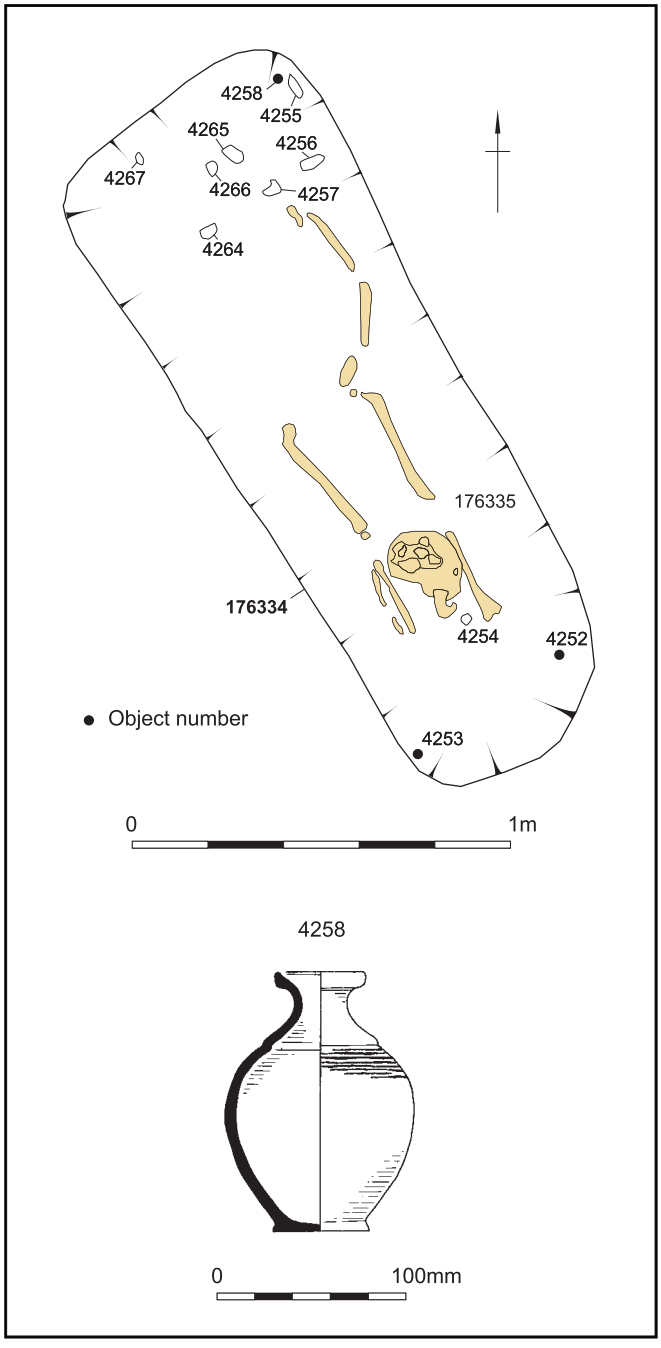


Fig 4.31 Plan of grave 176334 (Zone 10)

burial is 176335 (grave 176334), which had been decapitated and the head placed between the lower legs, facing north-east (see Pl 4.27).

The cemetery appears to have been used for a considerable time, starting in the early Roman period and with a middle Roman component. Burial 239278 in the south-west corner and grave 179267 in the south-east both date at least to the later 3rd if not to the 4th century (Pl 4.8). It is possible that the burials represented several generations of one family.

Grave catalogue (Zone 10 cemetery – all phases)

Grave 176334 (Burial 176335)

Fig 4.31, Pl 4.27

Grave: NW–SE, sub-rectangular with rounded ends, sides near vertical to flat base – 2.05 x 0.75m, 0.36m deep. Mid-grey brown sandy silt fill with very occasional charcoal flecks. 15 iron coffin nails recovered from fill.

Human remains: Burial supine, extended, feet to south-east, within coffin. Decapitation with skull placed between lower

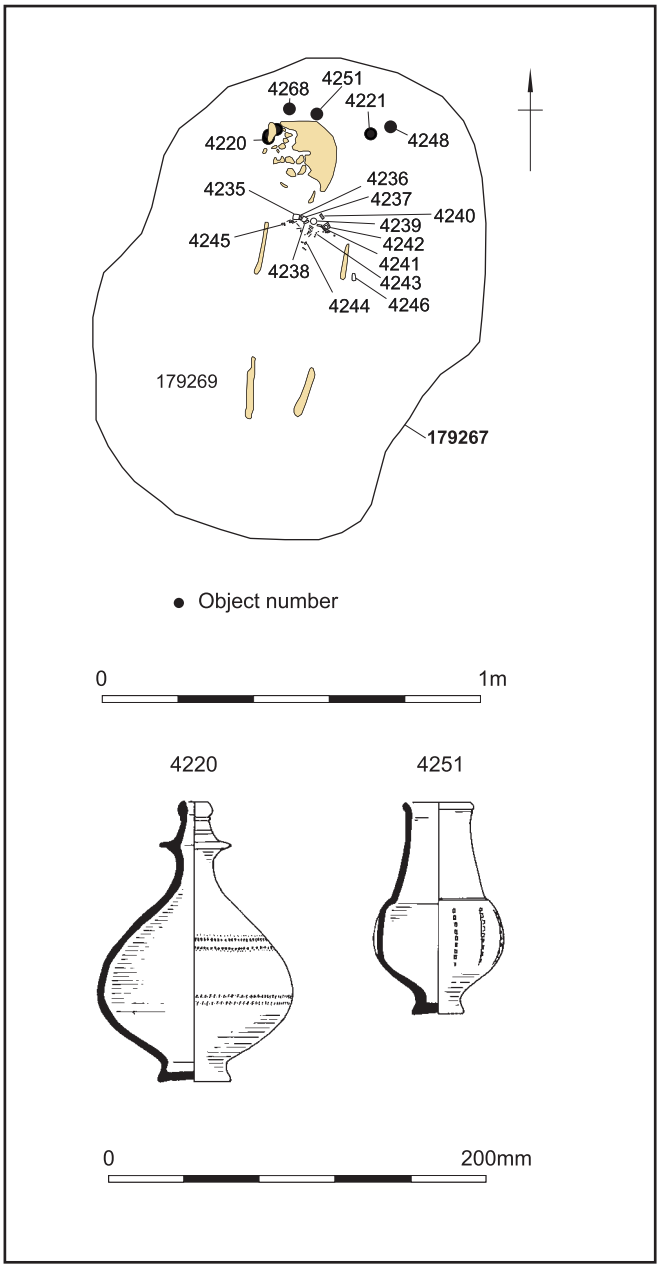


Fig 4.32 Plan of grave 179267 (Zone 10)

legs, just below knee and facing north-east. *c* 15% skeletal recovery. Adult *c* 30–40 yr. ?Female
Grave goods:
ON 4252: 8 hobnails and 3 fragments, Fe.
ON 4253–4257: 2 nails and 4 ?nail fragments, Fe.
ON 4258: Fine greyware flask, (Monaghan 1987 type 1B5), AD 120/130–200, complete. Capacity *c* 500ml. Placed in north-west corner of grave.
ON 4264–4267: Nail and three ?nail fragments, Fe.
ON 4662: 28 hobnails, 7 nails and further fragments, Fe (not located on plan).

Grave 179267 (Burial 179269)
Fig 4.32, Pl 4.8
Grave: N–S, sub-circular, slightly irregular cut with vertical sides to flat base – 1.28 x 1.1m, 0.45m deep. Mid- to light orange brown silty loam fill. 8 coffin nails recovered from fill.
Human remains: Burial supine with head to north, within coffin. Skeletal recovery *c* 10% with skull. Juvenile 4–5 yr.
Grave goods:
ON 4420: Oxfordshire colour-coated ware flagon (Young 1977 type C8), AD 240–400. Capacity *c* 300ml. Context 179271. Placed immediately north-west of skull.
ON 4221: Nail fragment, Fe.
ON 4242–4245: Glass beads (total 59). Translucent blue: 24 globular; 5 segmented and 2 drawn cylinder. Translucent blue-green: 11 drawn cylinder; 9 segmented and 7 wound cylinder. Opaque yellow: 1 annular.
ON 4235–4243: Jet beads (total 9). 5 pillar; 2 square and 2 domed disc.
ON 4246: Object, uncertain (4 fragments), Fe.
ON 4247(not located on plan)–4248: Nail and nail fragments, Fe.
ON 4251: Oxfordshire colour-coated ware beaker (Young 1977 type C29), AD 270–360. Capacity *c* 180ml. Context 179272. Placed immediately north of skull.
ON 4268: Nail fragments, Fe.
ON 4441: Nail, Fe (not located on plan).
ON 4630: Nail, Fe (not located on plan).
ON 4684: Nail fragments, Fe (not located on plan).
Sample 8451: Nail, Fe.

All beads come from a single necklace strung on fine copper alloy wire (2 lengths recovered), positioned around neck area.

Grave 182340 (Burial 182342)
Fig 4.33, Pl 4.9
Grave: NE–SW, sub-rectangular with rounded south-west end and steep sides to flat base – 2.26 x 1.18m, 0.72m deep. Mid-grey brown clay silt fill with occasional yellow patches and rare flints.
Human remains: Burial supine with head to north-east. Skeletal recovery *c* 85%. Adult *c* 35–45 yr. Male.
Grave goods:
ON 4222: Hobnail, Fe.
ON 4223: Nail, Fe.
ON 4224: Group of 78 hobnails, Fe, associated with right foot of skeleton.
ON 4225 and 4274: Groups of 25 and 51 hobnails, Fe, probably from same shoe associated with left foot of skeleton.
ON 4226–4227: Nails, Fe.
ON 4228: Greyware small, squat bowl, 2nd–3rd century AD. Single chip in rim. Capacity *c* 300ml. Context 182343. Placed near foot.

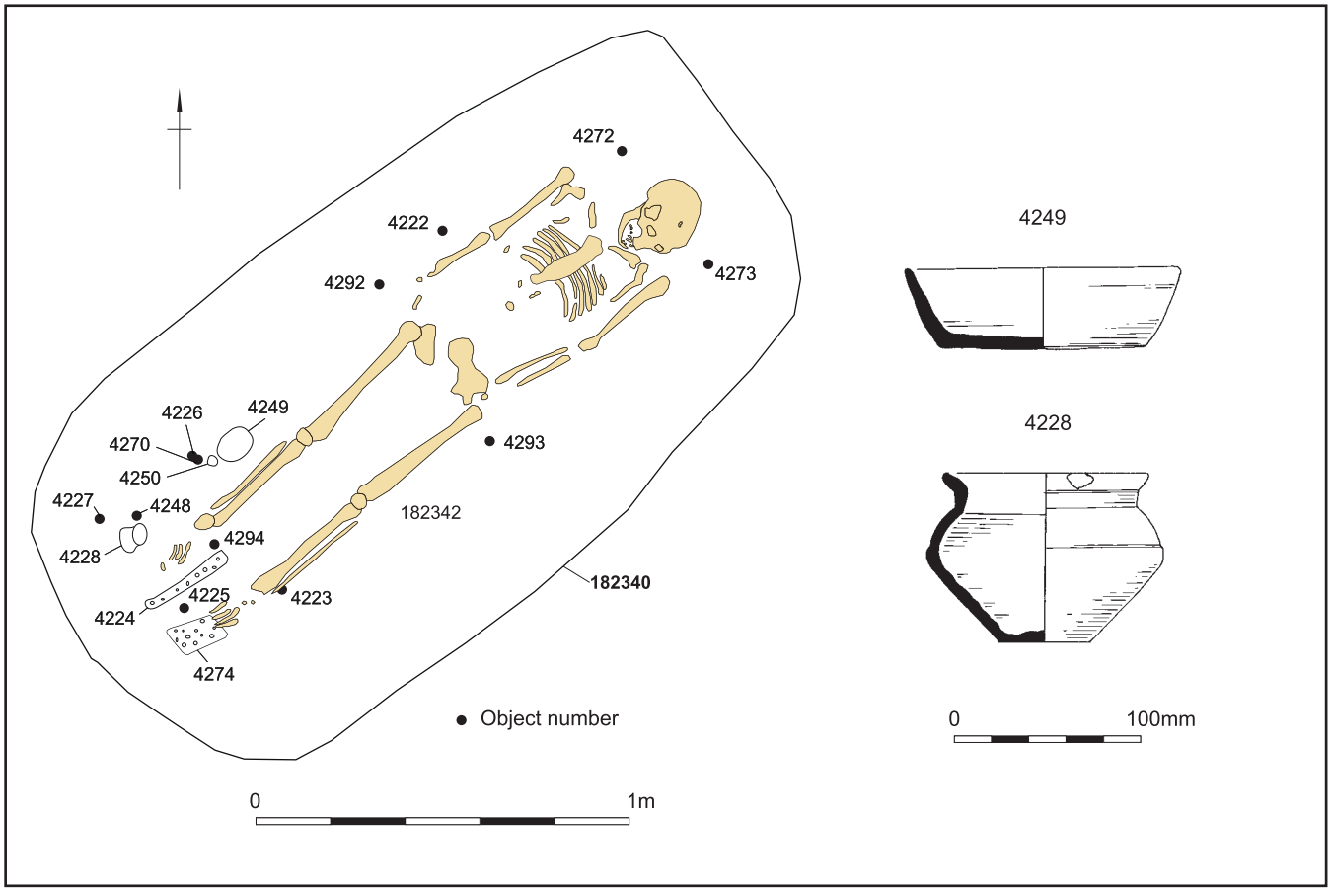


Fig 4.33 Plan of grave 182340 (Zone 10)

Pl 4.9 Dish containing pig bone, from grave 182340 (Zone 10)

ON 4249: Greyware grooved rim dish (Monaghan 1987 type 5F3), *c* AD 130/140–230/300. Capacity *c* 400ml. Context 182344. Containing animal bone (pig upper foreleg). Placed near knee.
ON 4250: Glass vessel fragments. Placed in south-west of grave, near ON 4249.
ON 4269: Nail, Fe (not located on plan).
ON 4270: Fragment, uncertain, Fe.
ON 4272, 4273, 4275, 4292–4294: Nails and nail fragments, Fe.

Grave 239260 (Burials 269262 and 269264)
Fig 4.34
Grave: N–S, sub-rectangular with vertical sides to flat base (heavily truncated to south by grave 239266) – 1.40 x 0.92m, 0.48m deep. Dark brown sandy clay loam fill with occasional chalk fragments.
Human Remains:
239262: Disturbed by grave 239266 and bone redeposited/ placed, lying directly above 239264. Skeletal recovery *c* 12%. Neonates x 2, *c* birth–2 wks.
239264: Disturbed by grave 239266 and bone redeposited/ placed, lying directly below 239262. Skeletal recovery *c* 80%. Adult *c* 45–50 yr. Female.

Grave 239266 (Burial 239268)
Fig 4.34, Pl 4.26
Grave: N–S, rectangular with vertical sides and flat base – 1.74 x 0.60m, 1.40m deep. Upper fill a dark brown sandy clay loam with occasional chalk fragments; lower fill, around and below skeleton, a dark organic-rich sandy clay loam with chalk flecks – probably derived from coffin. Coffin nails recovered from lower fill.
Human Remains: Burial supine, extended with head to south and left arm flexed, within coffin. Skeletal recovery *c* 80%. Adult *c* 45–55 yr. Female
Grave goods:
ON 4280: Nail, Fe.
ON 4281: Uncertain fragment, Fe.
ON 4287–4289: Nails and nail fragments, Fe.
ON 4290: Greyware everted rim jar (Monaghan 1987 type 3J2), AD 120–200. Single chip in rim; exterior surface spalled. Capacity *c* 800ml. Placed near feet but perhaps from grave 239260.
ON 4295–4299: Nails and nail fragments, Fe.
ON 4371: Nail, Fe.
ON 4372: 23 hobnails, Fe.

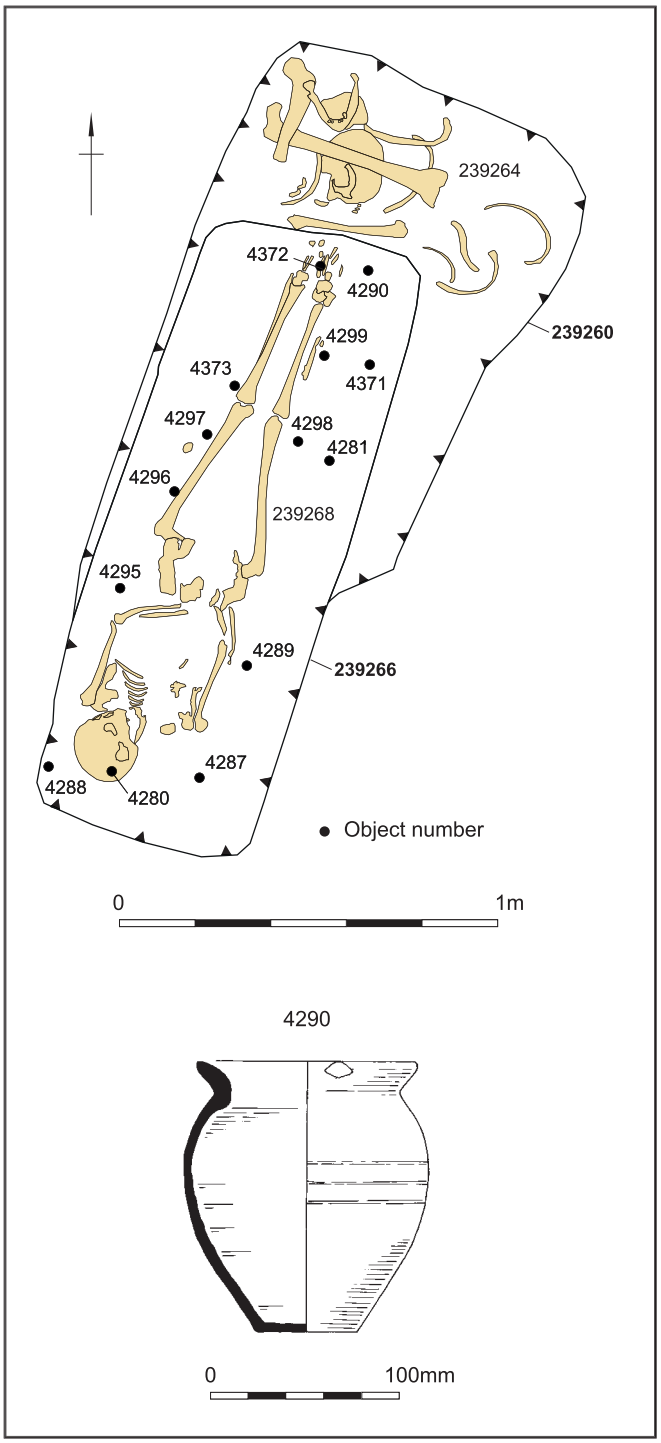


Fig 4.34 Plans of graves 239260 and 239266 (Zone 10)

ON 4373: Nail, Fe.
ON 4665 and 4674: 13 and 3 hobnails, Fe, recovered from foot area.

Grave 239278 (Burial 239281)
Fig 4.35, Pl 4.10
Grave: N–S, rectangular with rounded northern end and vertical sides to flat base – 2.08 x 0.84m, 1.11m deep. Fill noticeably darker in the vicinity of the skeleton, perhaps due to organic remains derived from a coffin. Coffin nails were retrieved from the fill. Gap of 0.4m between skull and southern end of grave cut.
Human Remains: Burial supine, extended with arms across abdomen. Skeletal recovery *c* 99%. Adult *c* 45–55 yr. Male.

Grave goods:
ON 4212: Fragment of bar, uncertain function, Fe.
ON 4213: As of Titus (AD 79–81) to south-west of skull. Possibly a curated item, old by the time of burial.
ON 4383: South-east Dorset Black Burnished ware everted rim jar (Seager Smith and Davies 1993, type WA 3), AD 250+. Single ancient chip in rim. Capacity *c* 500ml. Vessel placed on right side of skull.
ON 4385–4387: 5 nails, Fe.
ON 4388: Fragment of bar, uncertain function, Fe.
ON 4389–4390: Nail and nail fragments, Fe.
ON 4391: Fragment of bar, uncertain function, Fe.
ON 4392–4393: Nails, Fe.

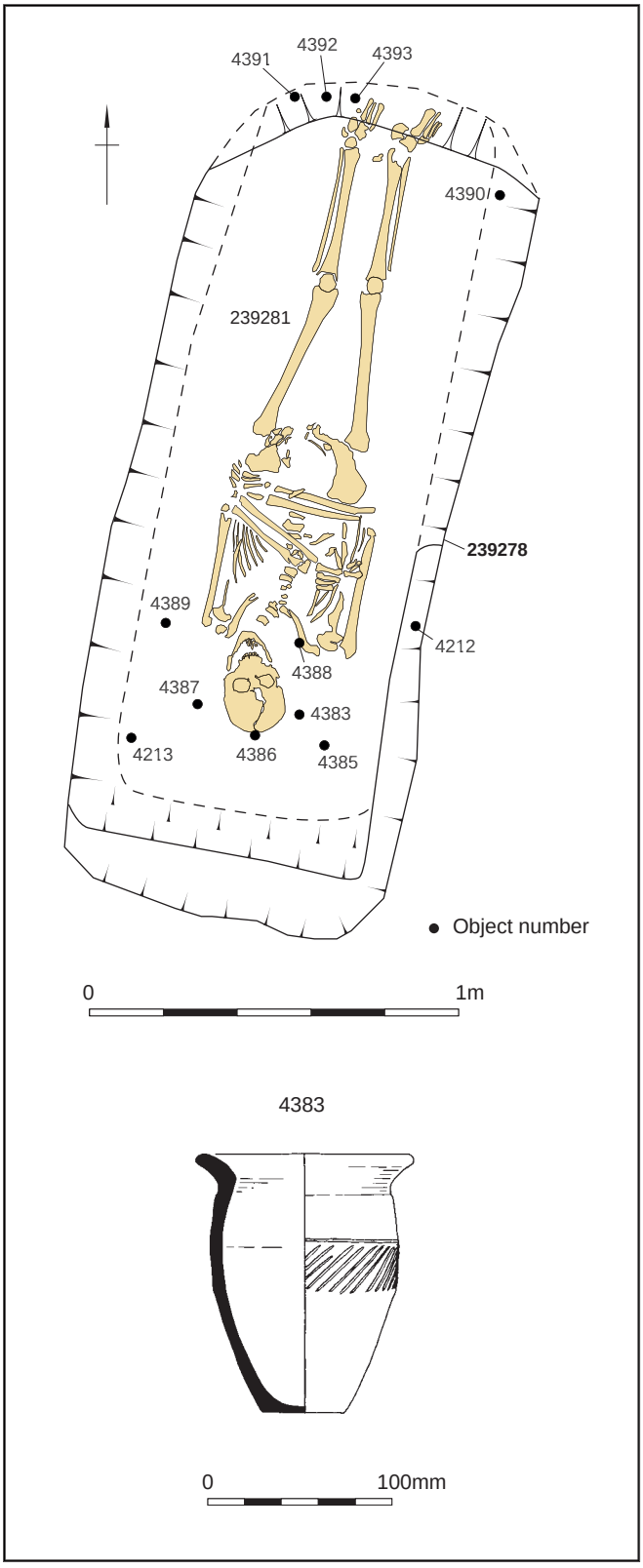


Fig 4.35 Plan of grave 239278 (Zone 10)

Grave 248221 (Burial 248220)
Fig 4.36, Pl 4.28
Grave: N–S, poorly defined sub-rectangular cut with steep sides to

Pl 4.10 Grave 239278 (Zone 10; view from east)

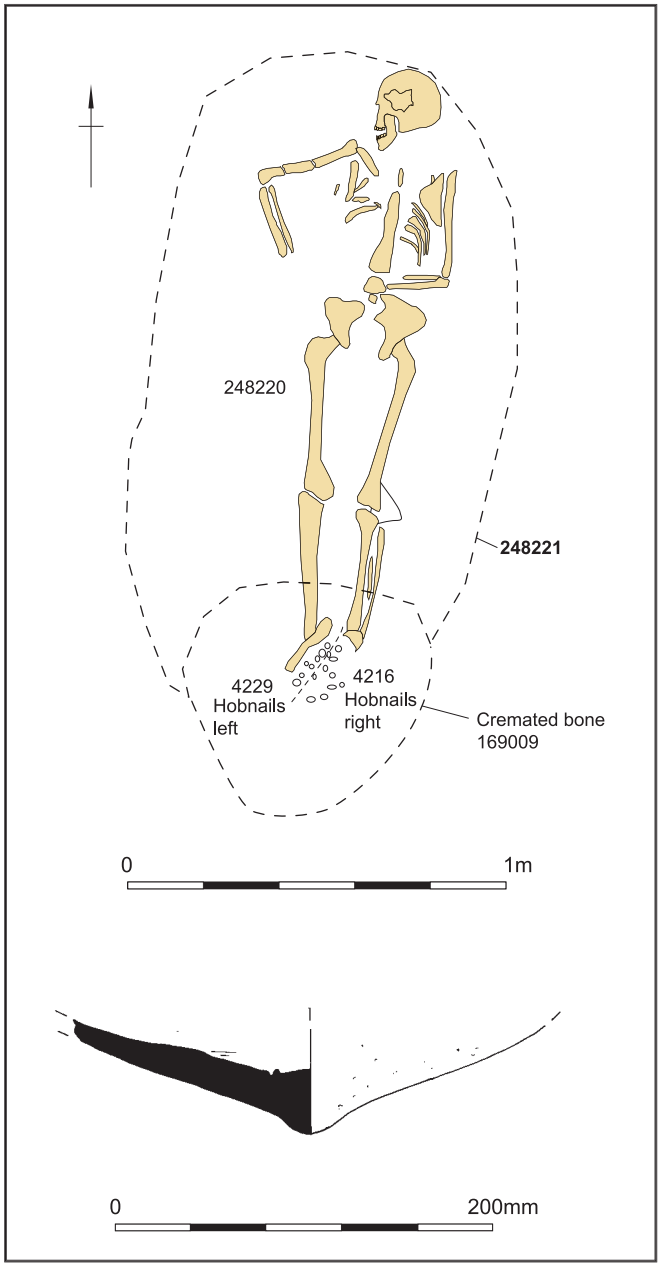


Fig 4.36 Plan of grave 248221 (Zone 10)

flat base – 1.94 x 0.9m, 0.45m deep. Mid-brown sandy clay loam fill with some greenish-black staining around bones. Deposit of cremated bone (169009) above feet of skeleton (see below).
Human remains: Burial prone, extended with right hand below abdomen and left arm flexed to west. Skeletal recovery *c* 70%. Adult *c* 21–25 yr. ?Female.
Grave Goods:
ON 4216 and 4229: Hobnails recovered from left and right feet respectively. The area of the left foot contained 52 nails (with another 17 from samples recorded under ON 4616), and the area of the right foot contained 36 nails.
Dressel 20 amphora – large sherd placed above feet of inhumation and covering ?redeposited cremation burial 169009. Other sherds placed on left knee and left elbow of inhumation.

Grave 258342 (Burial 258344)
Fig 4.37
Grave: N–S rectangular cut, tapering towards southern end. Sides near vertical to flat base – 2.15 x 1.16m, 0.9m deep. Dark brown sandy clay loam fill.
Human remains: Burial supine with head to south, arms crossed over abdomen. Skeletal recovery *c* 99%. Adult *c* 40–50 yr. Male.

Cremation burials
Grave 176311 (Burial 176312)
Fig 4.38
Grave: Circular – 0.55m diameter, 0.23m deep.

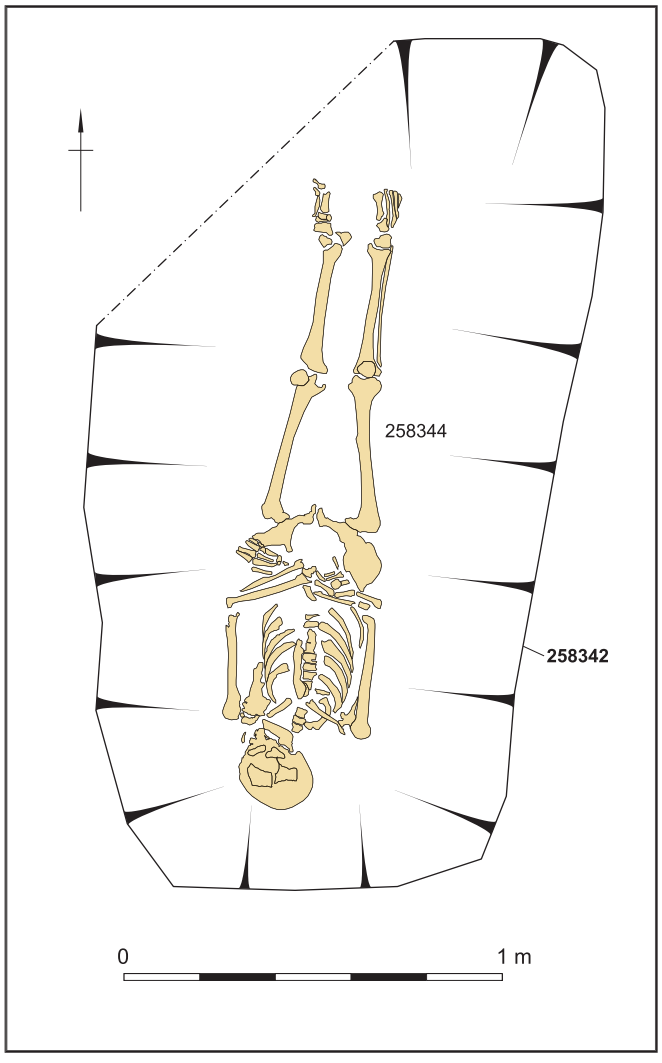


Fig 4.37 Plan of grave 258342 (Zone 10)

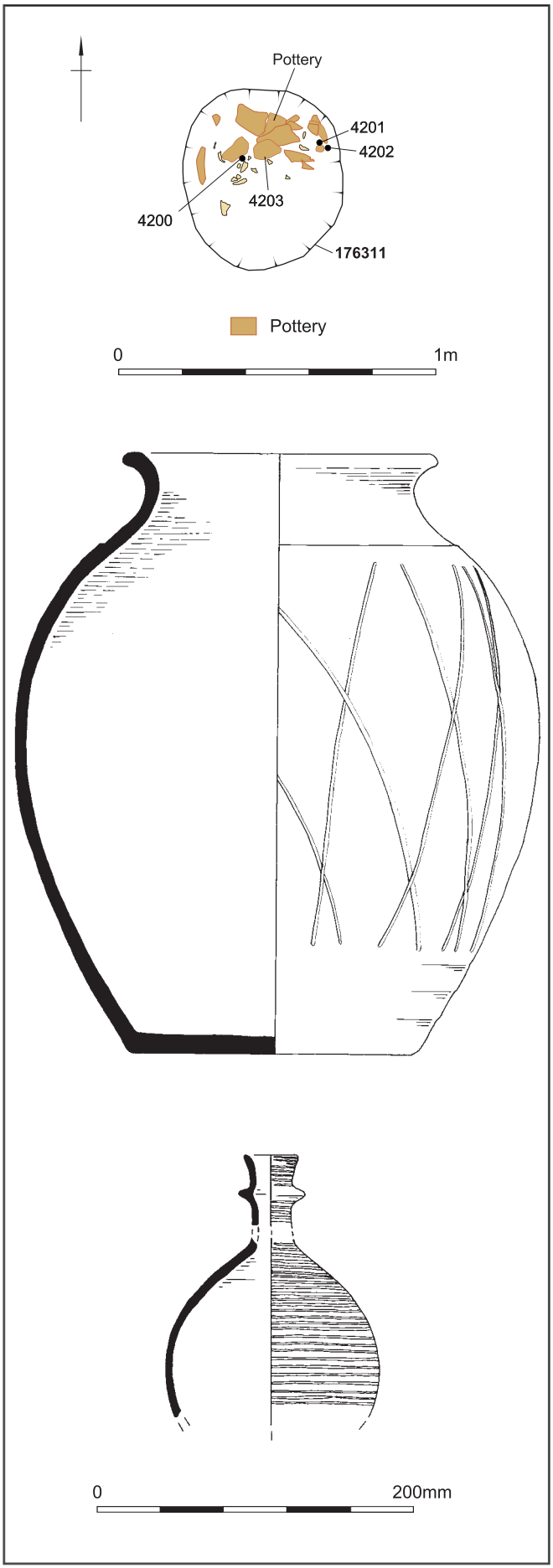


Fig 4.38 Plan of cremation grave 176311 (Zone 10)

Human Remains: Urned cremation burial. 1331.2g cremated bone and redeposited pyre debris. Adult *c* 25–35 yr. Female
Grave goods: Iron hobnails (from sample) 50 fragments ON 4200–4203. 4200 iron nails, 4201 bent nail, 4202 nail shafts, 4203 square-sectioned shaft with corroded head.
Urn: Grog-tempered ware large, necked storage jar with everted rim (Thompson 1982 type C6–1), 1st century AD; semi-complete but fragmentary; lower part *in situ* in centre of grave pit.
Fine greyware flask or flagon (Monaghan 1987, type 1E6), AD 100–200.

Grave 247315 (Burial 247316)
Not illus
Grave: Sub-circular with steep sides to concave base, deeper on east side, steps down to base at west side – 1.1 x 0.87m, 0.38m deep. Coffin nails and pottery sherds recovered from the fill. Disturbed?
Human Remains: ?Unurned cremation burial. 243.1g cremated bone. Adult >30 yr. ?Female. (Also, redeposited, part of an unburnt longbone (247314) from a ?Male adult >20 yr.).
Grave goods?
Grog, sand and flint-tempered ware storage jar with a faceted bead rim, possibly used as container for the cremated human remains, 1st–2nd century AD. Contexts 247314 and 247316.
ON 4207: 3 nail heads and 5 fragments, Fe.
ON 4208: 4 nail heads and 2 fragments, Fe.
ON 4209: Nail, Fe.
ON 4210: Nail, Fe.

Grave 248221 (Burial 169009)
Fig 4.36
Grave: See above for grave details. Deposit of cremated bone (169009) above feet of inhumation burial 248220.

Pl 4.11 Grave 42001 (Zone 10; view from south-west)

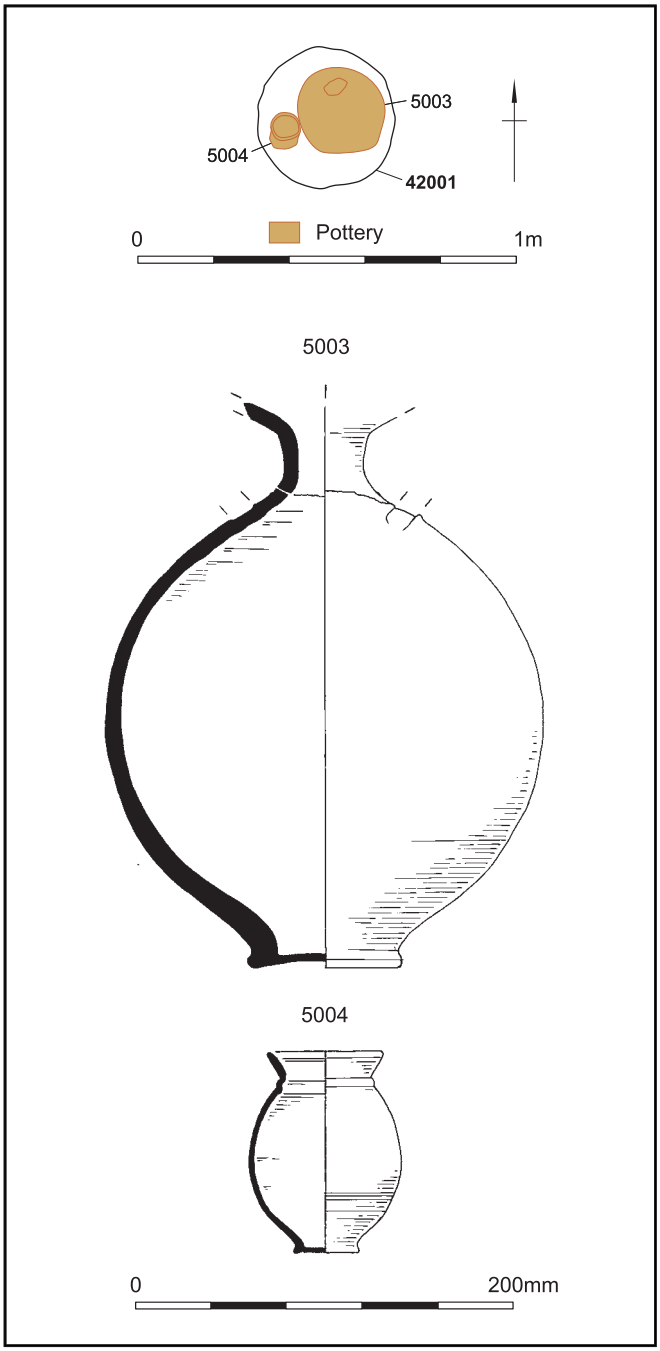


Fig 4.39 Plan of cremation grave 42001 (Zone 10)

Human Remains: 169009 = redeposited ?cremation burial. 19.8g cremated bone. Subadult/adult >15 yr.

Grave 42001 (Burial 42003)
Fig 4.39, Pl 4.11
Grave: Circular – 0.23m diameter, 0.23m deep.
Human Remains: Urned cremation burial. 1305.5g cremated bone. Adult *c* 45–55 yr. ?Male.
Grave goods
ON 5003 Urn: White-slipped greyware double-handled flagon, mid–late 2nd century AD. Rim/neck/handles removed in antiquity to facilitate the filling of the vessel with the cremated human remains, but apparently re-positioned once the vessel was filled and/or deposited as recently broken neck sherds were found inside the vessel. Capacity 5.1 litres. Context 42003.
ON 5004: Fine greyware plain poppy-head beaker (Monaghan 1987, type 2A5), AD 150/160–190. Capacity *c* 200ml. Context 42004.

'Grave' 42008/42019 (Burial 42009)
Not illus
Grave: Sub-circular – 0.56m x 0.51m, 0.22m deep.
Human Remains: 8.5g redeposited pyre debris. Adult >18 yr. ?Male.

Zone 11

Zone 11 lay higher on the slope of Sevenscore than Zone 10, the northern 'arm' continuing up the increasingly steep side of the chalk ridge, with the eastern 'arm' extending across the slope to Zone 12.

Enclosure ditches

At the southern end of Zone 11 the sequence of probable enclosure ditches that had its origins within the Iron Age continued with at least 18 ditches of Roman date (Fig 4.40). All followed the same, slightly curving north–south alignment over a total distance of at least 160m, extending beyond the limit of excavation to the north-west and south-west. The largest ditches were approximately 3m wide and 2m deep, but even the smaller were in the order of 2m wide and 1m deep (Fig 4.41). The majority of the ditches contained a mixture of Iron Age pottery and pottery that could only be broadly dated to the Roman period, and only one (171060) contained any material datable to the middle Roman period. This boundary was clearly continually re-established, but as the later Roman material (although only two sherds) is from one of the last of the recutting episodes it seems that the main temporal focus of activity was in the earlier Roman period. It is unclear what the ditches were enclosing but it was presumably a site of some importance, and may have been focused on a slight knoll lying within the arable field to the west of the excavated area.

Field system

Within the central and northern areas of Zone 11 was a series of generally shallow ditches that formed a field system which probably incorporated several enclosures or paddocks (Fig 4.40). The ditches of this system were oriented broadly N–S and E–W and extended up the scarp slope from the complex of enclosure ditches on the west side of the zone. The field system ditches overlay various ditches of Middle or Late Iron Age date (see above) and one of them (215063) cut the eastern-most (and amongst the earliest) of the complex of enclosure ditches to the west. However, it should be stressed that there was a general paucity of datable material, and relationships between individual ditches were often difficult to discern.

Ditch 215063 appears to have formed the southern boundary to the field system, though the alignment of middle Roman enclosure ditch 159335 a further 50m to the south suggests that this too was related to this arrangement.

Three ditches ran north from boundary ditch 215063, but there were no physical relationships between any of them. Ditch 159315 was the western-most of the three and extended, with a break, for approximately 70m, terminating at E–W ditch 159314 to the north. Three shorter, parallel E–W aligned ditches (159316, 159317 and 159318) were cut by ditch 159315 but were probably related, perhaps forming an earlier group of small paddocks.

Approximately 30m to the east and roughly parallel with ditch 159315 was ditch 159321, forming the eastern side of what may have been an enclosed area, ditch 159321 extending slightly to the north of ditch 159314, though the precise relationship between the two was unclear. Ditch 159314 was aligned E–W and crossed the width of the excavation area, with what appeared to be part of the same ditch bending to the south at its western end, perhaps respecting a large feature to the north, possibly a ditch terminal (215037), of which only the eastern end lay within the excavated area (see Fig 4.40 and below). Approximately 10m to the north of 159314 was a further, right-angled arrangement of ditches (159308) which appears to have been contemporary.

Ditch 159310, the central of three N–S aligned ditches, extended 60m further to the north of E–W ditch 159314, and appears to have been a single feature in excess of 100m long. It may have been an important boundary, and was possibly added slightly later, as it cut both ditches 159314 and 159308. Ditch 159310 was generally about 1m wide, but in places towards the north end had a width of up to 2.3m and a maximum depth of 0.7m.

Approximately parallel and 7.5m to the west of ditch 159310, but extending a further 90m to the north, was ditch 159285, which contained a moderate quantity of early Roman pottery. Together these two ditches may have defined a trackway, narrowing slightly to the south, though the interpretation remains tentative. Both predated at least one of the middle Roman rectangular enclosures (partly formed by ditches 159229 and 159303), suggesting that the field and enclosure system had an extended period of use.

Ditch 215037, immediately north of E–W ditch 159314, terminated just east of the western limit of excavation, and was very large in comparison to the majority of other ditches present (6.8m wide and 1.4m deep). The ditch may have been a significant boundary, perhaps related to the sequence of enclosure ditches situated to the south-west (see above). Ditch 215037 may have silted up over a long period, for it contained a few sherds of possible early or mid-Anglo-Saxon date in the upper fill.

The field system probably extended into the eastern arm of Zone 11, where it was represented by ditches 190400, 190404 and 144026, though precisely how the two areas of the system related to each other is unclear as they lay 100m apart and there were no ditches linking them. A gap in NNW–SSE ditch 190400 marked an entrance just under 2m wide, with ditch 144026 aligned NNE–SSW approximately 200m to the east and ditch 190404 probably forming an internal division. South of this division and 40m to the east of the entrance was a possibly contemporary and apparently isolated cremation burial. Grave 147141 was sub-rectangular,

and contained several pottery vessels of 1st-century date. Cremated bone from this burial gave a radiocarbon determination of 160 cal BC–cal AD 60 (2015±30 BP, SUERC-40271).

Grave catalogue
Grave 147141 (Burial 147139)
Fig 4.42, Pl 4.36

Grave: Sub-rectangular tapering slightly to east, with near-vertical sides to flat base – 0.76 x 0.61m, 0.16m deep. Single mid-brown silty loam fill with occasional charcoal flecks. Cremated bone occupied a small area within central eastern part of grave, and may have been originally placed within a bag. ON 441, a brooch spring, was on top of the cremated bone, perhaps to seal the bag. Additional (and separate) small deposits of cremated bone (44.7g and 6.8g) lay adjacent to vessel ON 440.

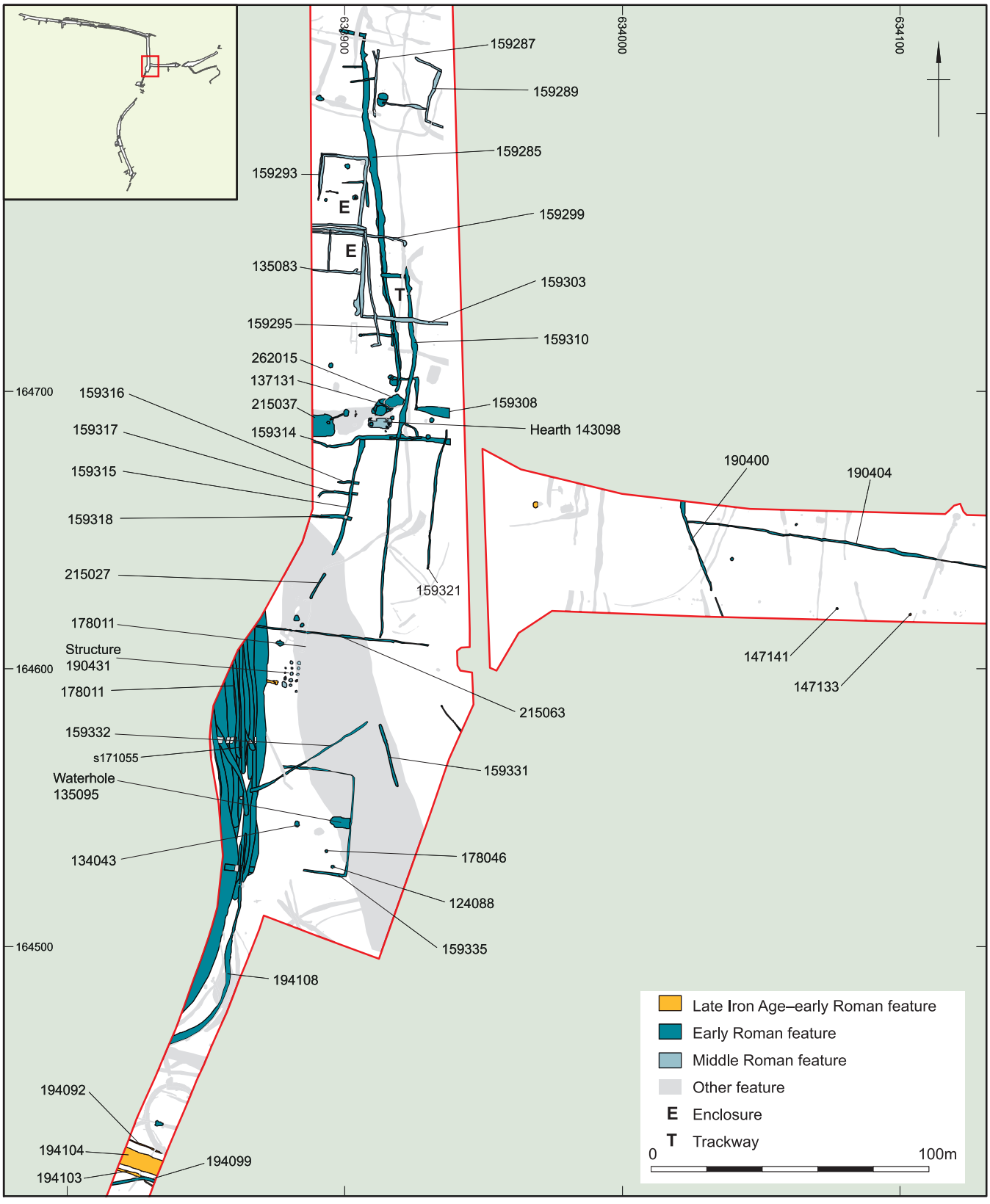


Fig 4.40 Plan of Late Iron Age and Roman features in Zone 11 and northern part of Zone 10

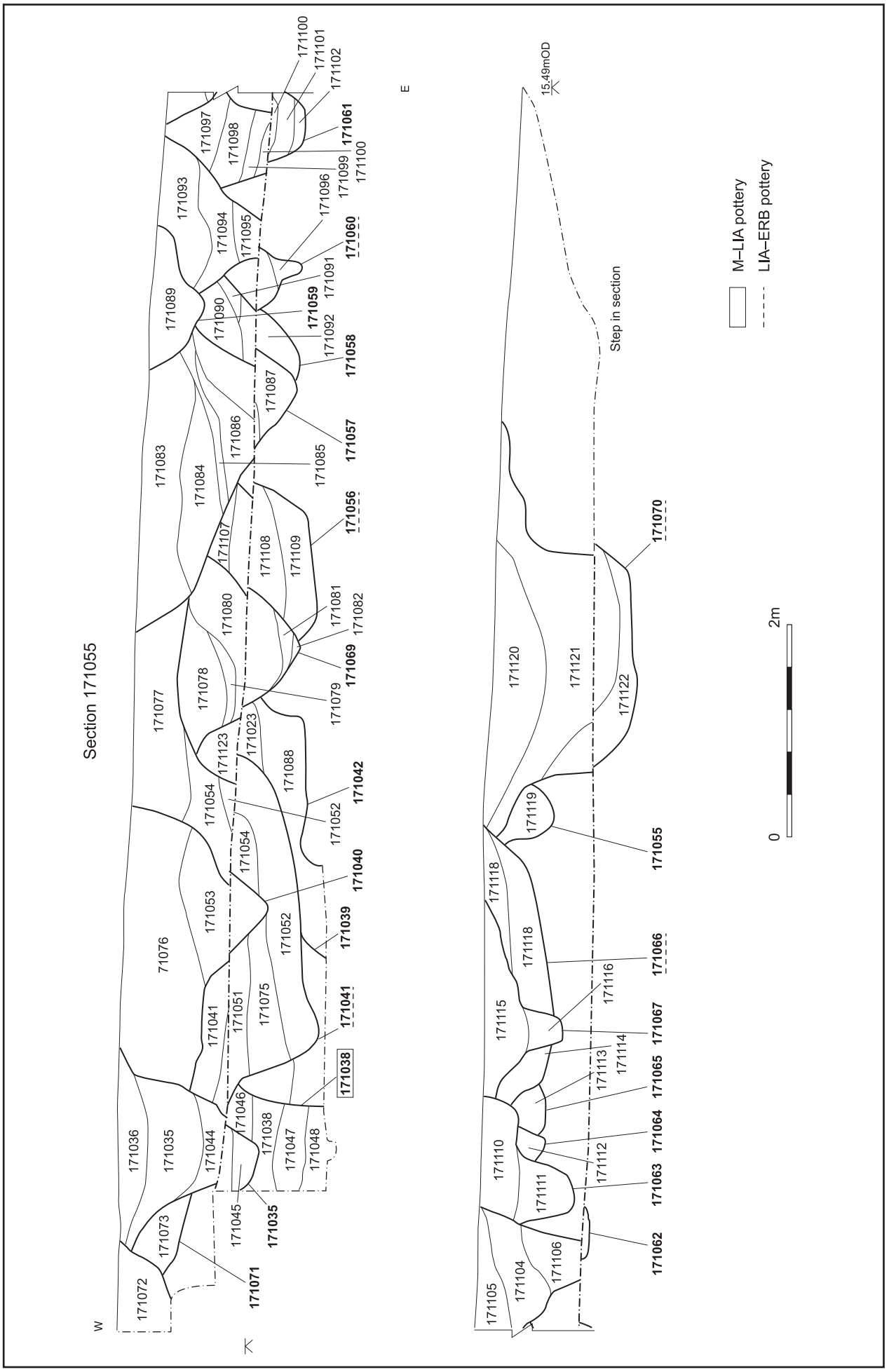


Fig 4.41 Section through Roman ditch sequence on western side of Zone 11

Human Remains: Unurned cremation burial. 365.1g cremated human bone. Adult >35 yr. ?Male.
Grave goods:
ON 435: Copper alloy bow brooch, foot and catchplate missing, Nauheim derivative. Placed in north-east of pit against edge of cut.
ON 436: Whiteware globular bodied flagon (Cam 131); rim missing, base very battered or spalled, first half of 1st century AD. Context 209119. Placed in north-west corner of grave to west of ON 435 and to north of ON 438.
ON 437: Whiteware butt beaker (Cam 113), AD 5–54/61. Context 209120. Placed within the south-west corner of the grave.
ON 438: Grog-tempered ware shouldered bowl, first half of 1st century AD. Context 209121. Placed in south-west corner adjacent to ON 437.
ON 439: Terra rubra (TR1C) platter (Cam 8; Stead and Rigby 1989, fig 54 type GB13), AD 10/25–65. Stamped by Vervico (potter no. 139 in the Gallo-Belgic pottery database), possibly made in Reims. Repaired in antiquity with birch bark tar-derived glue. Context 209121. Placed just south of the centre of the grave.
ON 440: Terra Nigra cup (Cam 56A; Rigby 1989, 125, fig 54, type GB 17), AD 1–65. Stamped by Avotis (potter no. 378 in the Gallo-Belgic pottery database). Context 209121. Placed in the south-east corner of the grave.
ON 441: Copper alloy brooch spring (not illustrated).

Middle Roman

Northern enclosures
Within the northern arm of Zone 11 and to the north of ditch 159314 was a cluster of features including several

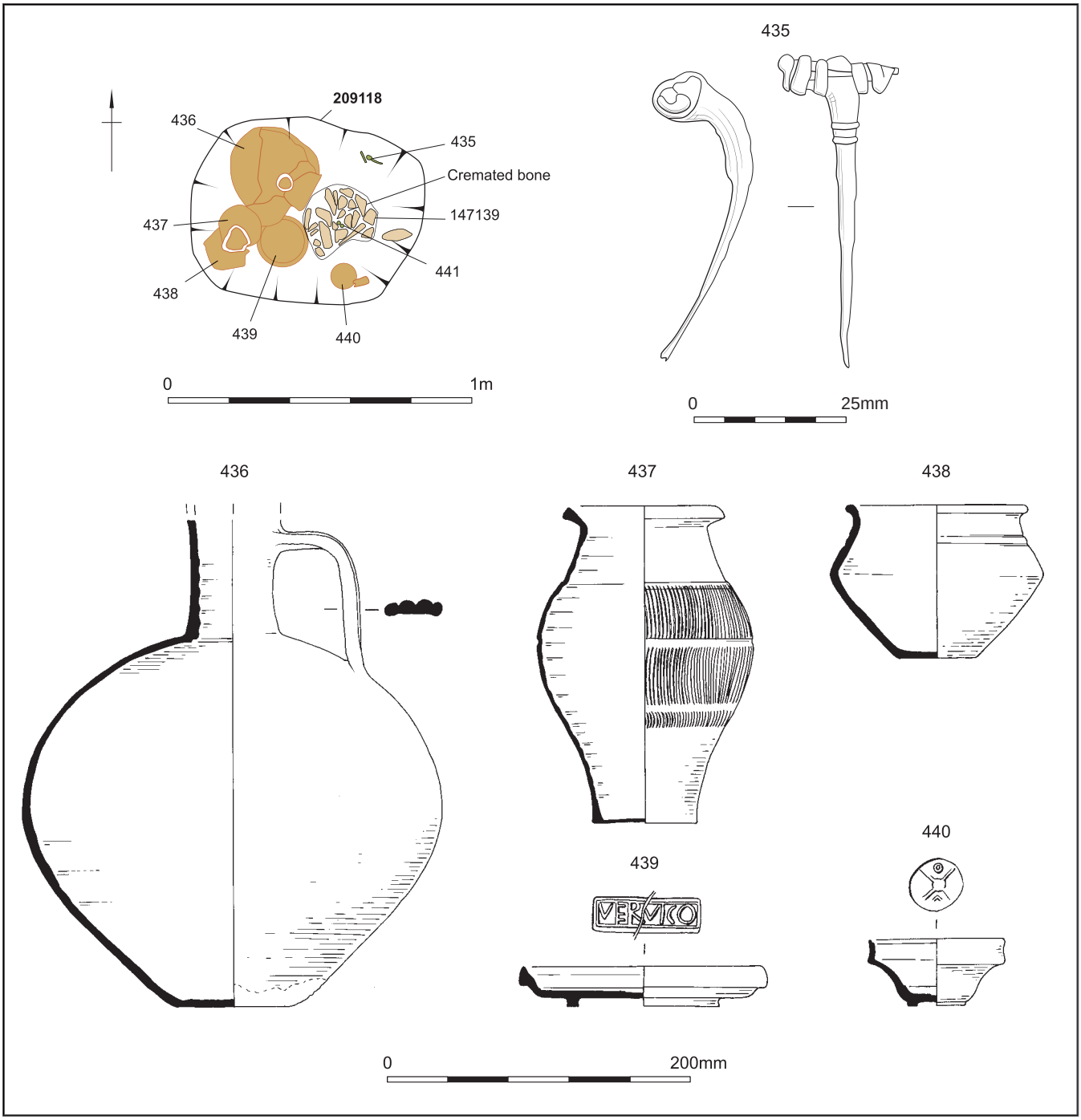


Fig 4.42 Plan of Late Iron Age–early Roman cremation grave 147141 (Zone 11)

patches of a possible chalk surface, a hearth and a number of pits which were cut into the infill of a natural hollow (137131) (Fig 4.40). The areas of compacted chalk, 143024, 143025 and 143026 may have been part of the foundation layer for a building, but were more likely areas of consolidation above the hollow. The chalk was partially overlain by a thin layer of dark soil (143023) which covered an area of approximately 8.5m by 3.8 m and contained middle Roman pottery, tile, shell and some nails. This deposit was cut by a poorly-surviving sub-circular hearth (143098), the clay up to 0.09m thick and scorched red. To the north of hearth 143098 were several possible quarry pits, the largest of these, 262015, measuring 6.1m by 4.15m and 1.14m deep. Over 4kg of middle Roman pottery, tile, animal bone, shell, and several iron nails were recovered from the fills.

Approximately 50m to the north of the chalk surface and probably related features, and perhaps contemporary with them, were two groups of relatively small rectangular or square enclosures which post-dated early Roman ditches 159285 and 159310. There were few finds and the dating of these enclosures is somewhat uncertain, but three phases are apparent in the southern group, all of probable middle Roman date. The earliest in the southern group is what appears to be part of a ladder enclosure, including ditches 135083 and 159299, running east to west and approximately 13.7m wide, extending beyond the limit of excavation to the west. Ditch 159303 recut part of the north side of the ladder enclosure before turning to the south at 90° and then to the east at 90°. Extending north from ditch 159303 was a rectangular enclosure (159293) measuring approximately 25m by 15m, with three small pits, evidence for sub-division, but no associated structural remains. Finally, ditch 159303 was cut by 159295, a narrow, shallow, slightly differently aligned ditch. This terminated to the south but was at least 60m long and after turning to the west at the north end continued beyond the edge of the excavation.

Approximately 20m to the north and on the same alignment as the southern group of enclosures was at least one, less regular, sub-square enclosure defined by ditches 159287 and 159289. This measured approximately 20m by 15m, but the extent of any adjacent enclosures is uncertain, particularly to the east, though there was no evidence for any to the north.

Southern features

Structure 190431 lay a little over 10m to the south of ditch 215063 marking the extent of the early Roman field system to the north (Fig 4.40). It comprised three rows of parallel postholes (19 features in total) and covered an area of 12.8m by 6.1m, probably representing a small building, perhaps of agricultural nature (Fig 4.43). Some of the postholes showed evidence for the renewal of the posts, and although several sherds of a generic Roman date were recovered, a single sherd of middle Roman pottery was also present. The postholes differed greatly in size and depth, with the largest measuring 1.3m diameter and 0.55m deep and the smallest 0.6m diameter and only 0.1m deep.

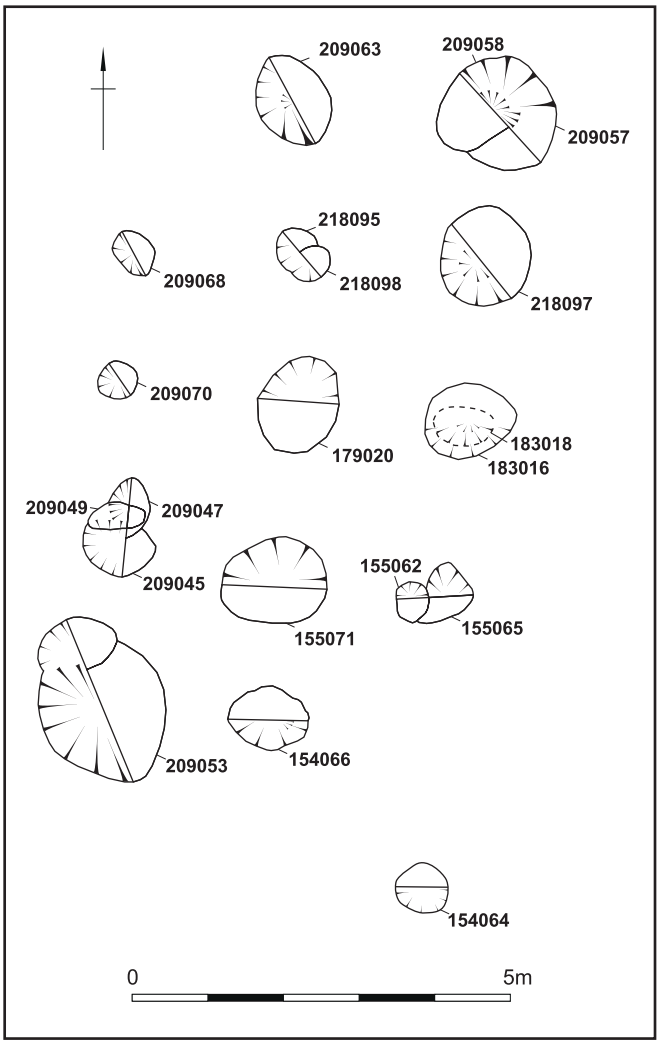


Fig 4.43 Plan of Middle Roman posthole structure 190431 (Zone 11)

Approximately 30m to the south of the structure, three sides of a rectangular enclosure were represented by ditch 159335. This measured 35m north to south and was open to the west, with no evidence that the west side had been truncated. In addition to residual Iron Age pottery, 20 sherds of middle Roman date were recovered. Within the enclosure a pit, 134043, also contained middle Roman pottery. The enclosure ditch cut a waterhole (135095) which was in turn cut into the upper fills of palaeochannel 190425 (see Chap 2), and measured 7.15m by 3.9m and up to 0.9m deep (Fig 4.44). The waterhole was vertical-sided, except to the west, where a gently sloping access point was

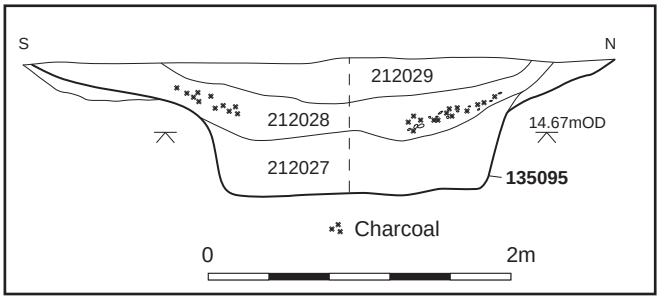


Fig 4.44 Section of waterhole 135095 (Zone 11)

located. In addition to a few sherds of middle Roman date, the waterhole also contained abraded fragments of tile.

The enclosure ditch was cut by a NE–SW aligned ditch (159332) which contained a sherd of Central Gaulish samian in addition to two possible fragments of copper alloy brooch (ON 429 and 430). A short length of ditch to the east (159331), and orientated at just under 90°, is probably related.

Within Zone 10 to the south, the middle Roman period is poorly represented, and with the exception of some of the burials (in particular 239278, but probably also 179267 and 182340), activity does not appear to have continued beyond the earlier part of the 3rd century. Only ditches 259253, (a recut of ditch 239255) within the extreme south-east of Zone 10, and ditch 135067, the ultimate in the sequence of Roman trackway ditches which crossed the zone, contained middle Roman pottery. Pit 258315, which cut an earlier Roman ditch, could perhaps have been of middle Roman date, but no finds were recovered from it.

Zone 12

The Iron Age hollow-way in Zone 12 continued in use into the early Roman period, and had by then developed into a substantial feature. Few contemporary features have been identified within the zone, but several pits within a water pipe trench to the south are of Roman date and hint at settlement in the vicinity.

Most Roman features (but notably few Iron Age features) were found in the 100m-long pipe trench which extended south from the southern edge of Zone 12, just west of hollow-way 190163. The first 20m stretch of this trench was 4m wide, before narrowing to 2m for a distance of 35m, then widening again to 4m for the remainder of the trench (Fig 4.45). The concentra-

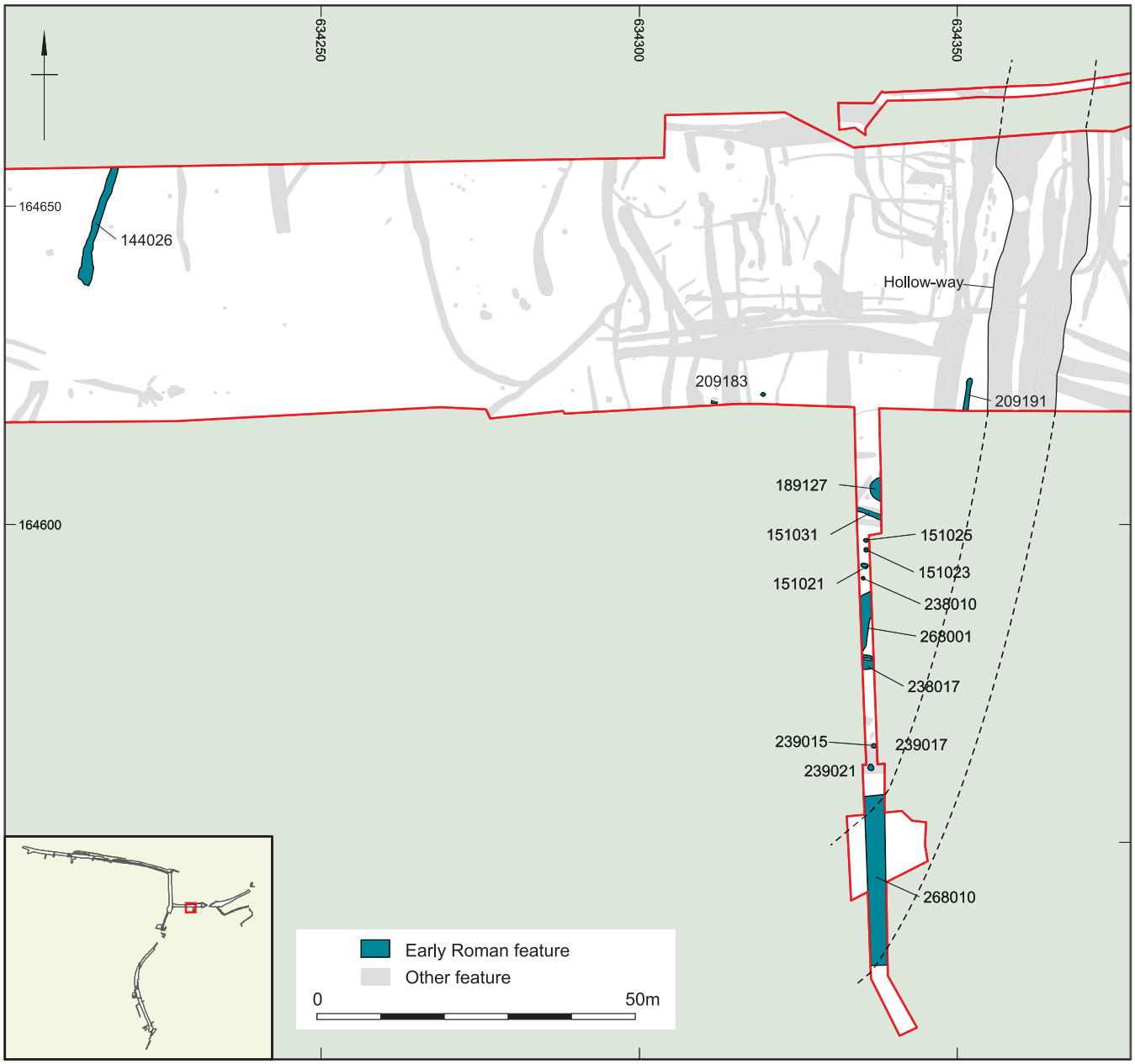


Fig 4.45 Plan of Roman features in Zone 12 and east end of Zone 11

tion of Roman features here, their relatively dark fills and moderate quantities of finds suggest settlement of this date in the vicinity.

In the southern part of the pipe trench was a large linear feature, 268010, a continuation of Iron Age/Roman hollow-way 190163 to the north. Because of the position and narrow width of the trench, linear feature 268010 was seen at an oblique angle, and was not fully excavated here because of this factor and a high water table. However, a complete iron tyre from a cart wheel was recovered from the upper fill of this section of the hollow-way (ON 1400, Pl 4.31, and see Scott, below). The projected southerly course of the hollow-way in Zone 12 takes it to a point on the former coastline immediately south of Cliffs End, close to the projected line of the Iron Age/Roman hollow-way recorded in Zone 10, if it too extended as far as the coast (see Fig 4.119).

Features recorded to the north of hollow-way 268010 included 239015 which was at least 0.6m wide and 0.25m deep and possibly part of a ditch flanking the hollow-way (Fig 4.45). Feature 239015 had been cut by two small, shallow pits, 239017 and 239021, both containing some ceramic building material.

Further along the pipe trench, 12m north of ditch 239015, was ditch 238017, aligned east-west and 1.4m wide and 0.45m deep. Parallel to this was a smaller gully, 238015, 0.35m wide and 0.5m deep. Just to the north of these features was a large ditch, 268001, at least 2.9m wide and 0.7m deep, apparently aligned NE–SW. Beyond ditch 268001 were four small pits, 238010, 151021, 151023 and 151025 (from south to north), with an average diameter of 0.7m and a depth of 0.3m, all containing similar fills and some pottery and animal bone.

The remaining Roman features within the northern part of the pipe trench consisted of a small ditch, 151031, 0.8 wide and 0.3 deep, and a large probable pit, 189127, 3.9m wide and with a minimum depth of 0.75m. Ditch 151031 cut ditch 151029 (undated, but probably Late Iron Age) and was cut by an undated ditch (151027). These features were aligned approximately perpendicular to the Iron Age hollow-way (190163) seen in Zone 12 to the north (see Chap 3), but it is uncertain if the alignment of that feature was maintained this far south.

Zones 13, 14, 15 and 26

Late Iron Age

In Zone 13 the ditch of the trapezoidal Iron Age enclosure (see Chap 3) was recut in places, particularly on the northern, eastern and north-western sides (Fig 4.46). Although this second phase feature (134101) followed the line of the original ditch for the most part, it was generally very much slighter, intermittent, and varied in width, depth and profile. As such, it is not likely to have represented a reinstatement of the enclosure for its original purpose, but may merely have made use of some conveniently-located features. The limited ceramic and stratigraphic evidence suggests a Late Iron Age/early Roman date.

Demonstrably Late Iron Age activity around the trapezoidal enclosure is rather limited in extent. Within the trapezoidal enclosure, four features were of this date. Of two situated in the north-east corner one (168163) was a shallow pit with evidence of burning which may have functioned as some kind of hearth or oven. The other (168185) was a small sub-circular pit, again with evidence of burning. Another pair of features (156146 and 203056) was situated to the south, one of them (156146) containing a very substantial pottery assemblage, along with animal bone, shell (oyster, periwinkle and whelk), fired clay, a quern fragment, ceramic triangular bricks and ceramic and stone spindle whorls, as well as an incomplete neonatal human skeleton.

Two further features cut the enclosure ditch. Feature 168155 was small, shallow and cut into the silted-up ditch in the south-west corner, containing a relatively large amount of Late Iron Age pottery. Feature 156185 on the western side was undated, but it too was cut into the top of the silted-up ditch, and was cut in turn by ditch recut 134101.

Between the north-east side of the enclosure and the group of quarry pits to the north, a rectangular pit 154081 contained large quantities of Late Iron Age pottery, along with animal bone, an iron ring and a fragment of a shale bracelet. Other features of similar size and plan lay in a comparable location to the south-east (pits 156111 and 156113) and to the north-west (pit 139237) as well as further to the north-east beyond the line of quarry features. These pits were mostly undated, but broad similarities with pit 154081 might suggest that they were of similar date. Quarry 159259 lay at the western end of the linear zone of quarries and pits in this area; it cut Iron Age gully 134104 (which ran roughly parallel to the north-east side of the trapezoidal enclosure) and contained Late Iron Age ceramics amongst its mixed finds assemblage.

North of gully 134104 four large pits (243013, 244003, 247004 and 292001) were probably Late Iron Age quarries subsequently used for rubbish disposal into the early Roman period, although the first two of these were not definitely assigned to this period.

Although on a rather limited scale in comparison to the earlier phases of Iron Age occupation in and around the trapezoidal enclosure, these features suggest continuity – or more probably renewal – of occupation. Whether or not the enclosure retained its previous significance is questionable: the ditches were almost entirely silted up by this time, and the limited redefinition of them was on a very much smaller scale, perhaps serving only to separate domestic activity in the south from the (probably agricultural) enclosure newly laid out slightly to the north-east, where a sub-rectangular enclosure and field system was established over the earlier D-shaped enclosure in Zone 14, and to the south in Zone 26.

In Zone 14 (Fig 4.47) a variety of ditches and gullies overlying the D-shaped Bronze Age enclosure appear to have formed a sub-rectangular enclosure possibly

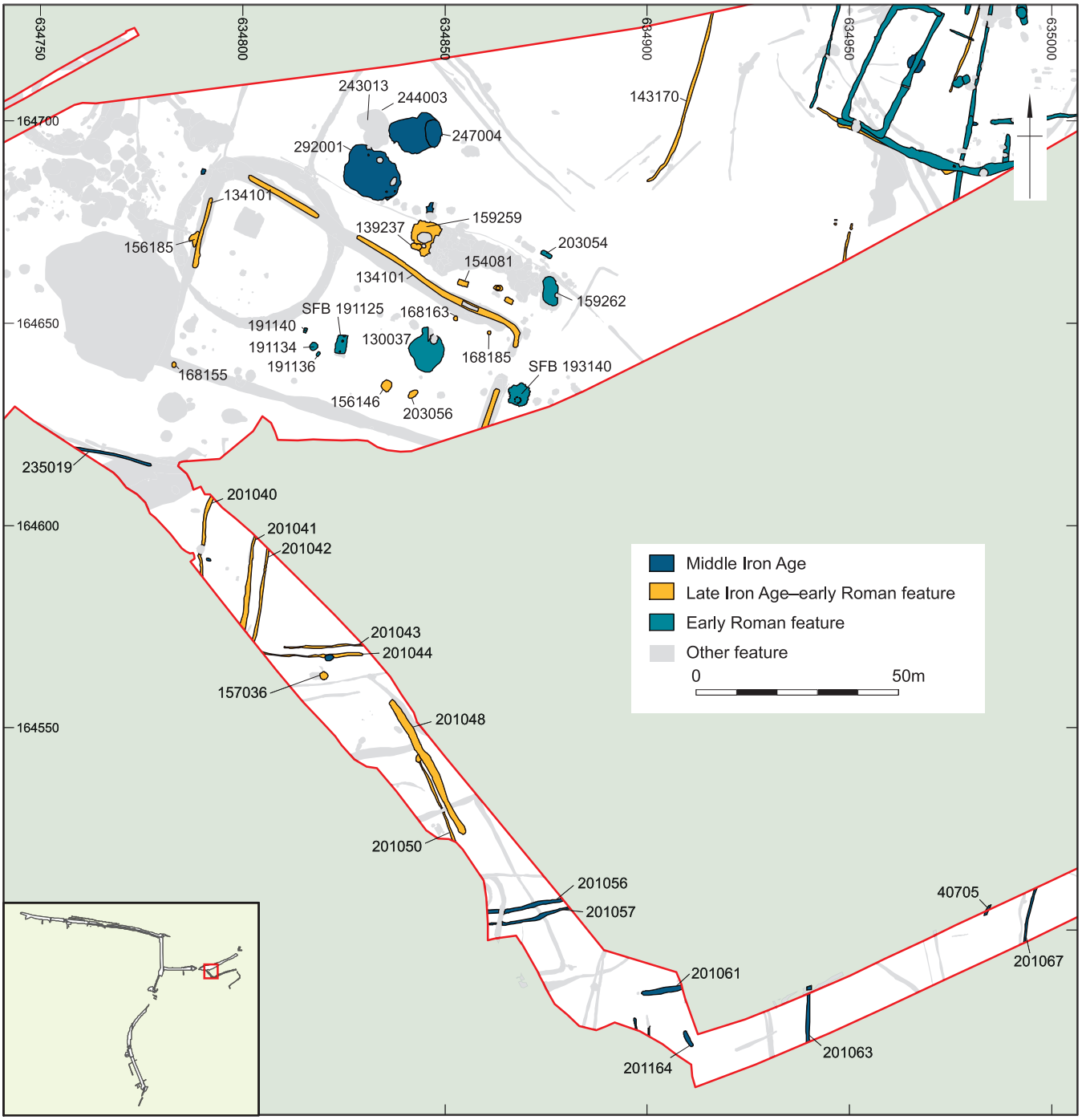


Fig 4.46 Plan of Late Iron Age and Roman features (Zones 13 and 26)

originating in the Late Iron Age which continued to be used and altered into the Roman period. More than one phase of enclosure is apparent and there were several internal divisions.

The earliest phase appears to have consisted of a series of relatively slight ditches or gullies (143170, 159220, 159242, 182140 and 159243; possibly 159221, 159225, 179094, 185052, 191148 and 191152, see Figs 4.46–7). Some of these at least are likely to belong to the Late Iron Age, and ditches 159242 and 182140 both contained small quantities of Iron Age ceramics. Within the enclosure, a small number of features may date to this first phase. Four pits (140120, 222046, 264024 and 178070, Fig 4.47) were cut by later ditches (the latter also contained Late Iron Age–early Roman pottery); four smaller pits or postholes (191122, 191124, 191144 and 191146) are dated only by association.

In Zone 26 a series of Iron Age gullies and ditches possibly represented a continuation of the settlement and field system overlying the D-shaped enclosure in Zone 14 (Fig 4.46) and the activity seen to the west during rescue excavations associated with the laying of a gas main (Willson 1984). It is also likely that some of the undated linear features are of this date and, though relatively small, two of the undated ditches apparently correspond with parts of a cropmark which appears to define a large sub-rectangular enclosure extending to the north of Zone 26.

Ditches 201040, 201041 and 201042 were aligned roughly north-south, the second and third of these

approximately 2.5m apart and possibly forming a double-ditched trackway. Ditch 201040 was a narrow slot, approximately 0.15m wide at its base, possibly a post or fence line, with a V-shaped upper profile widening to approximately 0.8m. The pair of possible trackway ditches were broader and U-shaped, 201041 0.4m deep and 201042 0.2m deep. The ceramic evidence is equivocal, but a Late Iron Age or early Roman date seems most likely, on the basis of the similarity of alignment with other, better-dated features in Zone 13.

East of the double-ditched trackway and at 90° to it a pair of gullies (201043 and 201044) formed a second, slightly narrower trackway. Gully 201043 was approximately 0.2m wide and deep, and contained small quantities of Iron Age pottery. Gully 201044 was broader and U-shaped, and contained a larger amount of Late Iron Age pottery. It was cut by Late Iron Age pit 240007. To the south, another pit (157036) contained Late Iron Age to early Roman pottery. South of these features was ditch 201048, approximately 37m long and aligned NW–SE. Although broad (2m on average) the feature survived to a depth of no more than 0.2m. Fifteen sherds of Late Iron Age pottery were recovered from this ditch. A similarly shallow (although narrower) slot 201050 ran parallel along the western edge of ditch 201048, starting further south and continuing beyond the limit of excavation. Although undated, it may have been contemporary.

Other possible contemporary features include very short lengths of ditches 201164 (containing 43g of Late Iron Age pottery), 201061, 40508 and 40705, only dated by very small quantities of pottery. Ditches 201063, 201067 and 235019 crossed the zone and are probably of a similar date.

Roman

In Zone 13 (Fig 4.46) eight features (or groups of features) are dated to the early Roman period (probably 1st century AD). Two sunken-featured buildings (191125 and 193140) formed the focus for this activity, which lay around and within the former Iron Age trapezoidal enclosure. One sunken-featured building (193140) was immediately outside the entrance. The

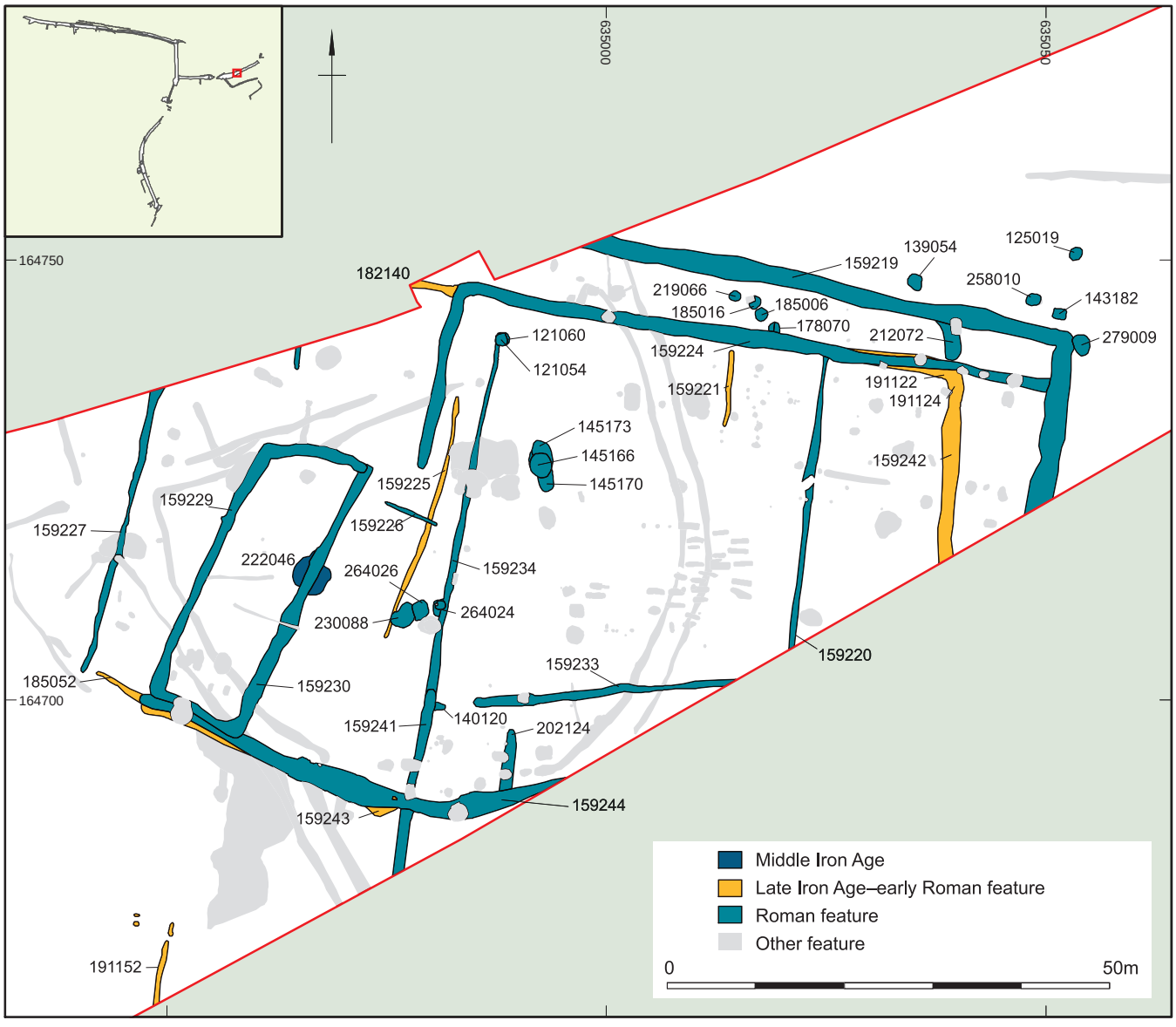


Fig 4.47 Plan of Late Iron Age and Roman features (Zone 14)

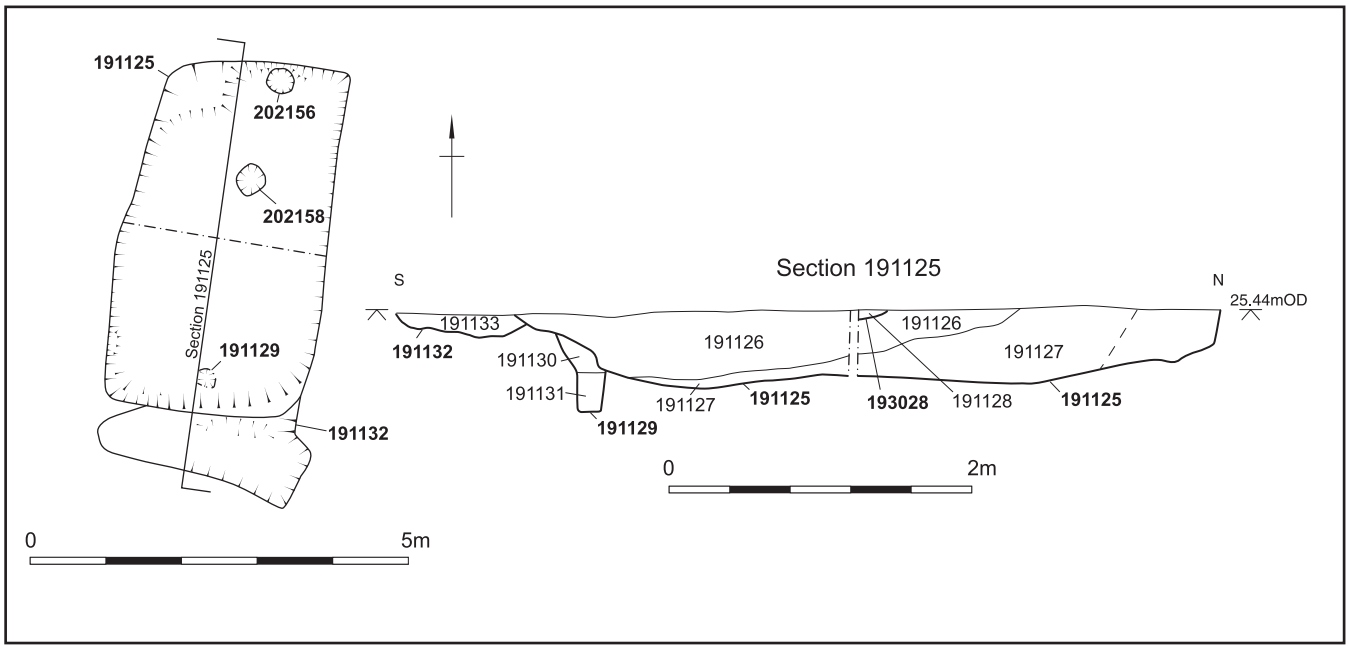


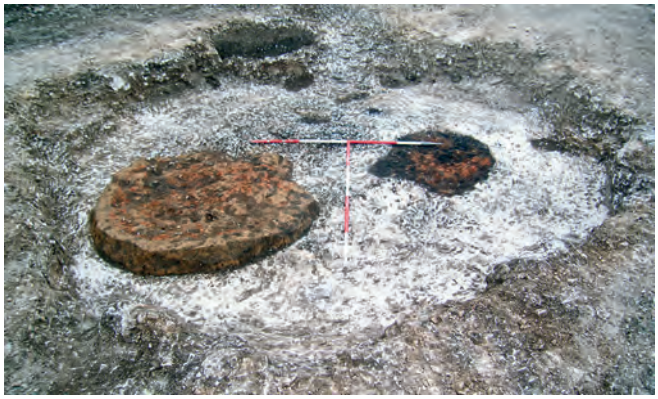
Fig 4.48 Plan and section of early Roman sunken-featured building 191125 (Zone 13)

second (191125) lay within the enclosure at its approximate centre.

Sunken-featured building 191125 (Fig 4.48) was a simple rectangle 4.7m long by 2.7m wide with three postholes along the near centre-line. It contained a limited range of material from its fill sequence (animal bone, a ceramic tile, fired clay, shell, a mortice chisel (ON 4568, Vol 2, Fig 3.7,1) and Late Iron Age to early Roman pottery).

Sunken-featured building 193140 was a more complex structure (Fig 4.49; Pl 4.12). A very irregular sub-rectangle in plan, 4.6 by 4.2m in maximum dimension with a maximum surviving depth of 0.70m, the building had a clearly defined ramp, centrally placed, leading down onto the floor level from the north-western edge, with a large posthole (173205) and five smaller stakeholes (173210, 173209, 173208, 173204, 173207) on either side of it, presumably forming an entrance structure. Other postholes and possible postholes (173203; 173243, 173241, 173239) were present against or cutting into the north-east wall, resulting in a very uneven edge to the feature on that side. None of the fills of these features contained any finds. The natural chalk on the southern and western sides of the building was very markedly worn, indicating that the chalk formed an actual floor or working surface (or that any intervening layers had worn away and were not replaced).

In the southern part of the building was a roughly circular clay-built oven (173198), approximately 1.9m in external diameter, 1.5m diameter internally (Pl 4.49). The function of this oven is unknown, as it had been cleaned out prior to the collapse of the roof, material from which filled the structure (173212). The only other material within the fill was a little animal bone and shell. Removal of the surviving oven wall revealed a circular arrangement of 19 stakeholes (168330) approximately 1.5m in diameter, indicating the location of the wattle frame for the oven superstructure (Fig 4.50). None of



Pl 4.12 Early Roman sunken-featured building 193140 (Zone 13; view from south)

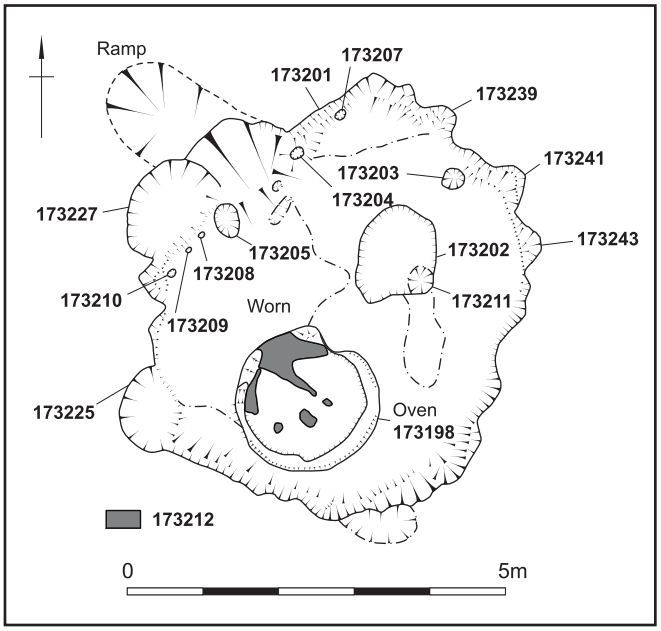


Fig 4.49 Plan of early Roman sunken-featured building 193140 (Zone 13)

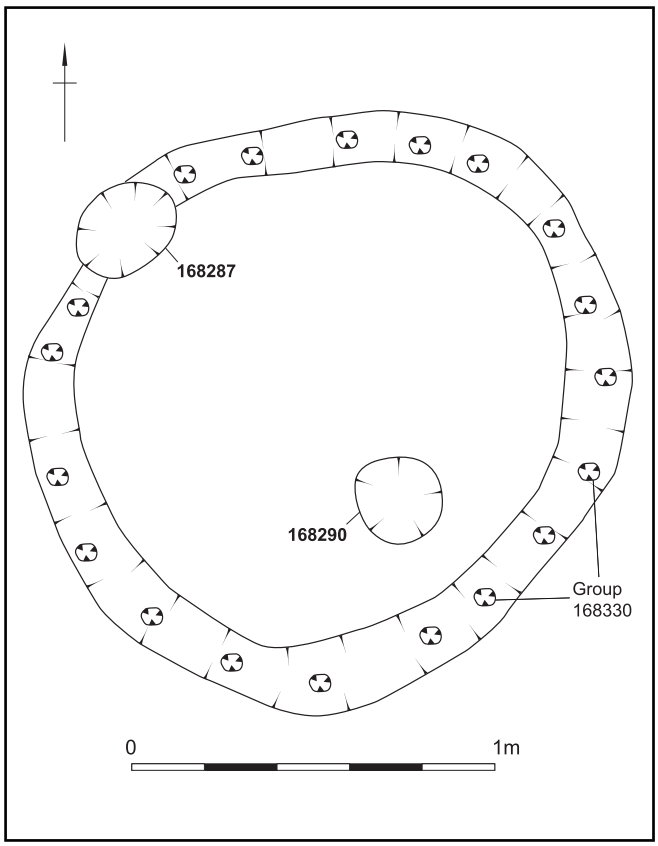


Fig 4.50 Plan of oven base stakehole group 168330 in sunken-featured building 193140 (Zone 13)

these stakeholes contained any finds. North of the oven was a large shallow pit (173202), approximately 1.3m by 1m in plan and only 0.1m deep, containing burnt material which may have been raked out from the adjacent oven.

After its abandonment, the building filled with a sequence of layers (173199; 173237, 173230, 173235, 173238; 173231, 173234; 173233; 173229, 173236, 173232; 173200; 200092). The sequence was rich in material, including over 14kg of pottery, plus animal bone, fired clay, worked stone (including a squared chalk block with incised squares from context 173199 (Fig 4.123, 3)), oyster, whelk and mussel shell, ceramic building material and – in the uppermost layer – an assemblage of metal objects including a small Colchester two-piece bow brooch (ON 1509), an iron sickle or reaping hook (ON 1513), strip, knife (ON 1515), nail (ON 4566) and hipposandal (ON 1516). As a whole, the material derives from activity in the early Roman period.

Between the two sunken-featured buildings, a large pit (130037) was probably contemporary, whilst west of SFB 191125, pits 191140, 191134 and 191136 contained early Roman ceramics and domestic rubbish (animal bone, shell and occasional metal objects), typical of the contents of the pits belonging to this period. On the north side of the enclosure, pit 203054 and quarry 159262 may also have been contemporary with the settlement.

In the eastern part of Zone 14, the sub-rectangular Late Iron Age enclosure appears to have been replaced by a possibly similar early Roman enclosure, though the extent of this remains somewhat speculative (Fig 4.47). Ditch 159234, aligned NNE/SSW was stratigraphically the earliest in this group but produced no datable finds. It was 1–1.5m wide, less than 0.5m deep, and extended 60m from the edge of the site before terminating to the north. At its southern end it was recut as ditch 159241 and to the east was a similar ditch, 159233, aligned east–west, a gap of 3m between them probably an entrance. Ditch 159233 contained Roman pottery, but could not be more closely dated. A short length of ditch, 202124, to the south of 159233 and parallel to 159241 may have been part of this layout.

Subsequent ditches were generally more substantial, and appear to have defined a larger, sub-rectangular enclosure measuring approximately 100m by 65m and aligned WNW–ESE, like its Iron Age predecessor. To the south, slightly curving ditch 159244, at least 50m long, cut ditch 159241, terminated to the west and continued beyond the limit of excavation to the east. This ditch marked the south side of the postulated enclosure and was 1.5–2m wide and up to 1m deep. From the upper fills came a few sherds of mid-Saxon pottery and some oyster shell, but the ditch was otherwise undated; however, it was cut by ditch 159230 which contained Roman pottery (see below). Approximately 7m west of the terminal of ditch 159244 was the southern terminal of a smaller, possibly contemporary ditch, 159227, containing just two sherds of Iron Age pottery, which ran SSW–NNE and may have marked the west side of the enclosure. To the north, ditches 159219 and 159224 were clearly related and defined the northern and eastern sides of the enclosure. An L-shaped ditch (159219) in excess of 70m long – continuing both to the west and south – was 2–2.5m wide, up to 0.8m deep with fairly steeply sloping sides. The north-west corner of the enclosure formed by ditch 159219 lay approximately 14m beyond that of the Late Iron Age predecessor. Around 6m from ditch 159219 was L-shaped ditch 159224. Ditches 159219 and 159224 contained similar fills which included very small quantities of pottery of Iron Age to mid-Saxon date, animal bone and shell, largely from the upper fills. A copper alloy spur (ON 1709) also came from ditch 159224. The date of this object is uncertain; it was originally thought to be middle Roman, but it might be of later, Anglo-Saxon date (see Vol 2, Scott, Chap 3, Fig 3.7, 11). Towards the south-west corner of the sub-rectangular enclosure was a smaller, somewhat irregular sub-rectangular enclosure, measuring approximately 35m by 10m and aligned NNE–SSW, defined by ditches 159229 and 159230. These were 0.8–1.75m wide and 0.6m deep, the narrower lengths having near-vertical sides. Ditch 159230 cut the northern edge of ditch 159244 which marked the south side of the larger sub-rectangular enclosure, and contained early Roman pottery, a small quantity of iron smithing slag, and some animal bone and shell. The possibility that ditches 159229 and 159230 represented a structure can probably be ruled out on the basis of its overall size as well as the nature and depth of the ditches, though the function of the enclosure remains uncertain.

The relationship of ditches 159229 and 159230 to ditch 159244 is crucial in clarifying the dating of the enclosure sequence and supports a probable early Roman date, despite the presence of small amounts of Anglo-Saxon material including pottery (and presumably some of the animal bone and shell) in the upper fills of most of the enclosure ditches. It can also be noted that the disposition of mid-Saxon features, particularly pits, shows no spatial correspondence with the enclosures, and virtually all of the enclosure ditches were cut by pits assigned a mid-Saxon date (see Chap 5). Nevertheless, finds of Roman date were generally sparse.

Within and adjacent to the enclosure were 15 pits of certain or probable Roman date (139054, 230088, 264026; 145170, 145173, 145166; 121054, 121060; 219066; 185016; 185006; 258010; 143182; 279009; 125019), some in small intercutting groups. Few contained much datable material, but a combination of finds and stratigraphy allow 139054 and 185006 to be assigned to a first phase, 230088, 258010 and 279009 to a second phase, and 121054, 121060 and 264026 to a second or third phase. The remaining seven pits are assigned to the Roman period on the basis of their location and associations.

Two further Roman pits (202062 and 202068, not illustrated) lay towards the east end of the zone, in an area otherwise occupied by Anglo-Saxon pits (see Chap 5). There were no other contemporary features.

Zones 17 and 18

The ditches of an Iron Age field system crossed Zone 17 on a WNW–ESE alignment (183012, 171012, 171016 and 143032) and Zone 18 on a NNE–SSW alignment (135042, 135044, 135047 and possibly 135046) (see Fig 6.12). The ditches varied greatly in width and depth, up to a maximum of 1.75m and 0.77m respectively. This is almost certainly due to variations in the extent of truncation and the underlying geology, with brickearth to the south and chalk to the north.

The ditches contained small amounts of pottery, mainly from those in Zone 17, with dates ranging from the Middle to Late Iron Age (ditches 143032, 183012, 171012 and 171016). The westernmost ditch of the field system, in Zone 18, contained a sherd of Roman date. This suggests that the field system originated in the Middle Iron Age but was in use throughout the Iron Age and possibly into the Roman period. Other finds included small amounts of prehistoric flint and animal bone. Alternatively it is possible that many of the finds were redeposited and do not indicate the true date of the establishment of this field system.

Zones 19 and 19a

Zone 19 and Zone 19a, the parallel pipeline easement to the south, lay on Thorne Hill, close to the crest of the chalk ridge, and overlooked the scarp slope and Pegwell Bay beyond to the south-east. Thorne Hill formed a slightly higher area here, at 46.5–48.5m aOD within Zone 19, with the ground dropping away gently to the east (to 45 aOD in Zone 18) and west (to a maximum of 48 aOD in Zone 20). Earlier investigations connected with the installation of gas pipes recorded a concentration of Iron Age and Roman features, as well as cemeteries of Roman and Saxon date, all in the central part of Zone 19 (Perkins 1985).

Late Iron Age to early Roman

A small number of features in the west of Zone 19 were dated to this phase, suggesting sparse activity related to a settlement focus just to the north. These features included two pits (209227 and 279071), two short lengths of gully (267030 and 267007) and two dispersed postholes (209230 and 209234, not illustrated). All these features contained a small number of pottery sherds of Middle to Late Iron Age date but no other finds.

In the east of Zone 19 a scatter of features of Late Iron Age date represent the beginnings of activity that continued into the Roman period in an area focused (in that period) south of ditches 126170 and 126172 (Fig 4.51). These ditches were possibly drainage features associated with an early (Iron Age) phase of the trackway that existed immediately to the north much later in the Anglo-Saxon and medieval periods (see Chaps 5 and 6). Four pits (126211, 139327, 220125 and 126327, not illustrated) were in a dispersed group in the east of Zone 19. All four were circular in shape, with steep straight sides and flat bases. All had similar mid-brown silty fills with occasional flint and chalk inclusions and contained a few sherds of pottery of Middle to Late Iron Age or Iron Age date. Small amounts of other material from these pits including animal bone and fired clay suggest that they were rubbish pits.

Roman

Activity intensified in this area in the Roman period with the establishment of at least two trackways and two cemeteries, one of which appeared to be associated with a small enclosure, though the trackways could have originated during the Iron Age and thereafter seen continuous use throughout the Roman period (and possibly later) (Fig 4.51). Both trackways perhaps branched off from an earlier trackway which is thought to have run along the top of the chalk ridge to the north (Pl 4.13), on a similar course to that later followed by medieval *Dunstrete*, whilst ditches 126170 and 126172 may also have been associated with a further, early trackway (see above). The projected course of these trackways, probably shifting over time and resulting in the formation of a braided pattern of hollow-ways, heads broadly in the direction of the villa and earlier settlement at Minster (eg, Parfitt *et al* 2009).

Trackway 193119 followed an irregular course on a rough NE–SW alignment and broadly defined the southern limit of Roman activity in Zone 19. It varied in width between 5m and 15m and was only 0.2m in depth, forming a broad, slightly undulating and sinuous

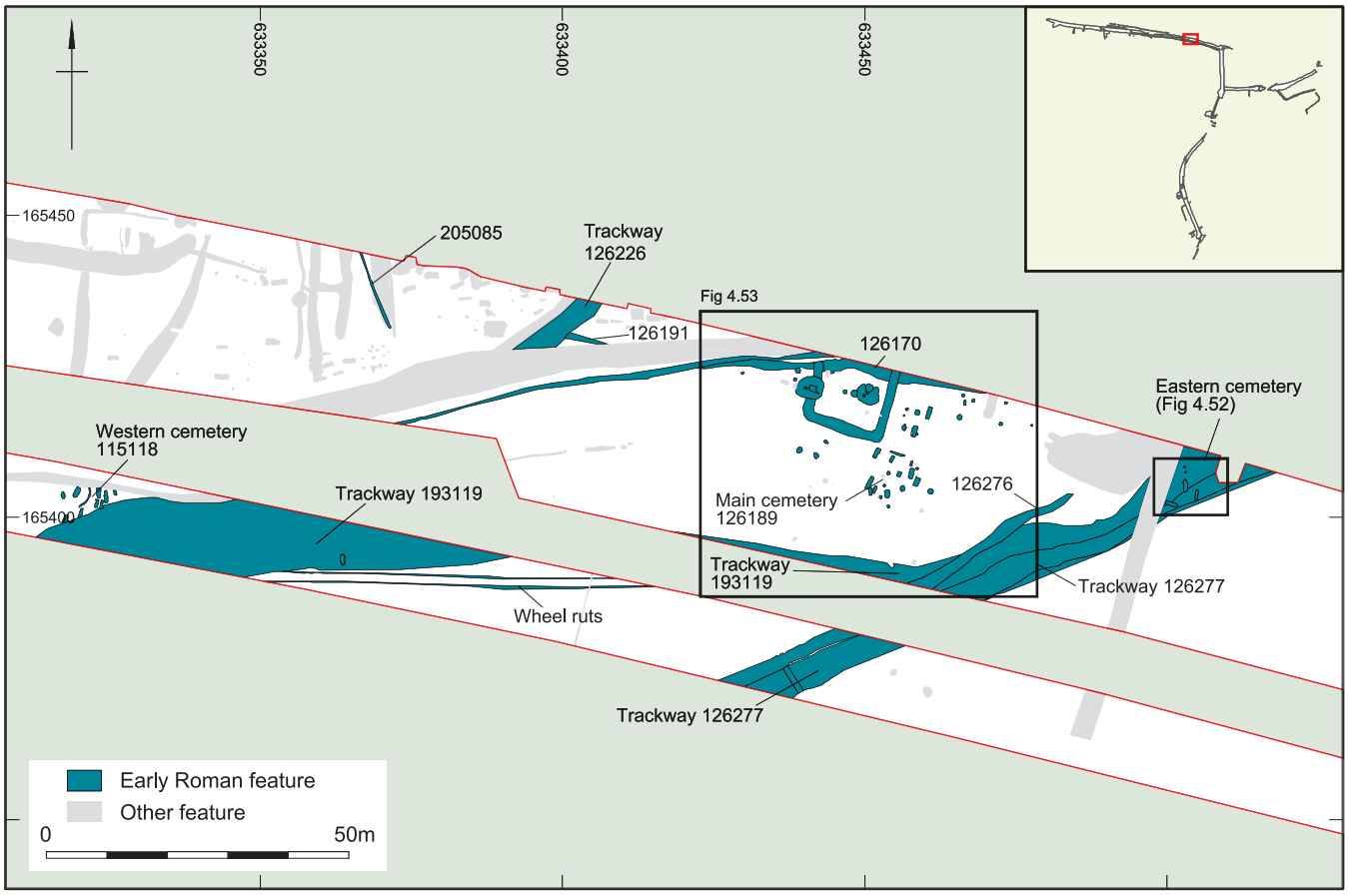


Fig 4.51 Plan of Roman cemeteries, trackways and other features in Zone 19

feature. It is likely to have developed through repeated use, rather than being formally established, and only intermittent patches of gravel metalling were present in the base. The single sherd of pottery recovered from this is dated to the 1st to 3rd century AD. A pair of shallow wheel ruts 1.8m apart lay immediately to the south and were apparently associated with this trackway, although this is based purely on their alignment.

Trackway 126277 appears to represent a realignment of trackway 193119, with its southern part extending in a more south-westerly direction. This trackway varied in width from at least 2m in the north (although it was probably truncated here) to over 6m in the south and it was fairly shallow, measuring 0.4m in depth. Some gravel metalling survived towards the north-eastern end, but was much more sporadic to the south-west where

Pl 4.13 Roman trackways 126277/193119 right and 126226 (and Anglo-Saxon hollow-way 126227) left in Zone 19, crossing the area from south-west to north-east, with cemetery 126189 excavation in progress between them (view from south)

the trackway deepened slightly. The small amount of pottery recovered from it had a broad Roman date. A ditch (126276) ran parallel and adjacent to the trackway, cutting it on its north-western side, and perhaps functioning as a drainage ditch. Ditch 126276 was 2.25m wide and 1.1m deep with a steep-sided profile and a flat base, and petered out in the north-east, cut by a post-medieval chalk quarry and modern service trenches. To the south-west it extended beyond the limit of excavation. Only two sherds of pottery, of Middle to Late Bronze Age and Middle to Late Iron Age date, were recovered from its fill.

Trackway 126226 further to the west, another branch of the trackway system in this area, is discussed further below.

Main cemetery 126189

A mixed-rite Roman cemetery lay to the north-west of the boundary defined by trackways 126277 and 193119, with an additional discrete group of five burials approximately 30m to the east cutting trackway 126227 (described further below, see Figs 4.51–3). The main cemetery group comprised 11 inhumation burials and 18 cremation burials, in addition to the five inhumation and five cremation burials recorded during earlier excavations in the 1970s and 1980s in advance of the installation of gas pipes (Perkins 1985). Three 'empty' graves, possibly cenotaphs, were also present. Other burials may lie beyond the limit of excavation to the north, though the cemetery boundary here may have been defined by east-west ditch 126170, whereas to the east, west and south the limits of the cemetery have been clearly established. The inhumation graves concentrated in a NE–SW aligned group in the central area of the cemetery, with the cremation graves scattered amongst and around them and four a little further to the west. Together these graves covered an area of 50m by at least 25m.

Most of the graves appear to cluster to the east and south-east of a small square or rectangular enclosure (249029, see below) and two probably related sunken-featured buildings (126117 and 217102), with three graves (220099, 220115 and 220129) immediately to the west of the enclosure and one (153068) within it. The exact chronological relationship between the graves and these features, all of early Roman date, is somewhat uncertain. Some of the 10 1st-century AD cremation burials may well be earlier, but there are three mid-2nd-century or later cremations burials (166082, 220099 and 279076) and a 4th-century inhumation burial (176342). Cremation grave 153068 within the enclosure cannot be closely dated and of the three to the west, only 220099, of mid-2nd-century date, contained pottery or grave goods.

The mixture of cremation and inhumation burials, together with the ceramic and limited finds evidence,

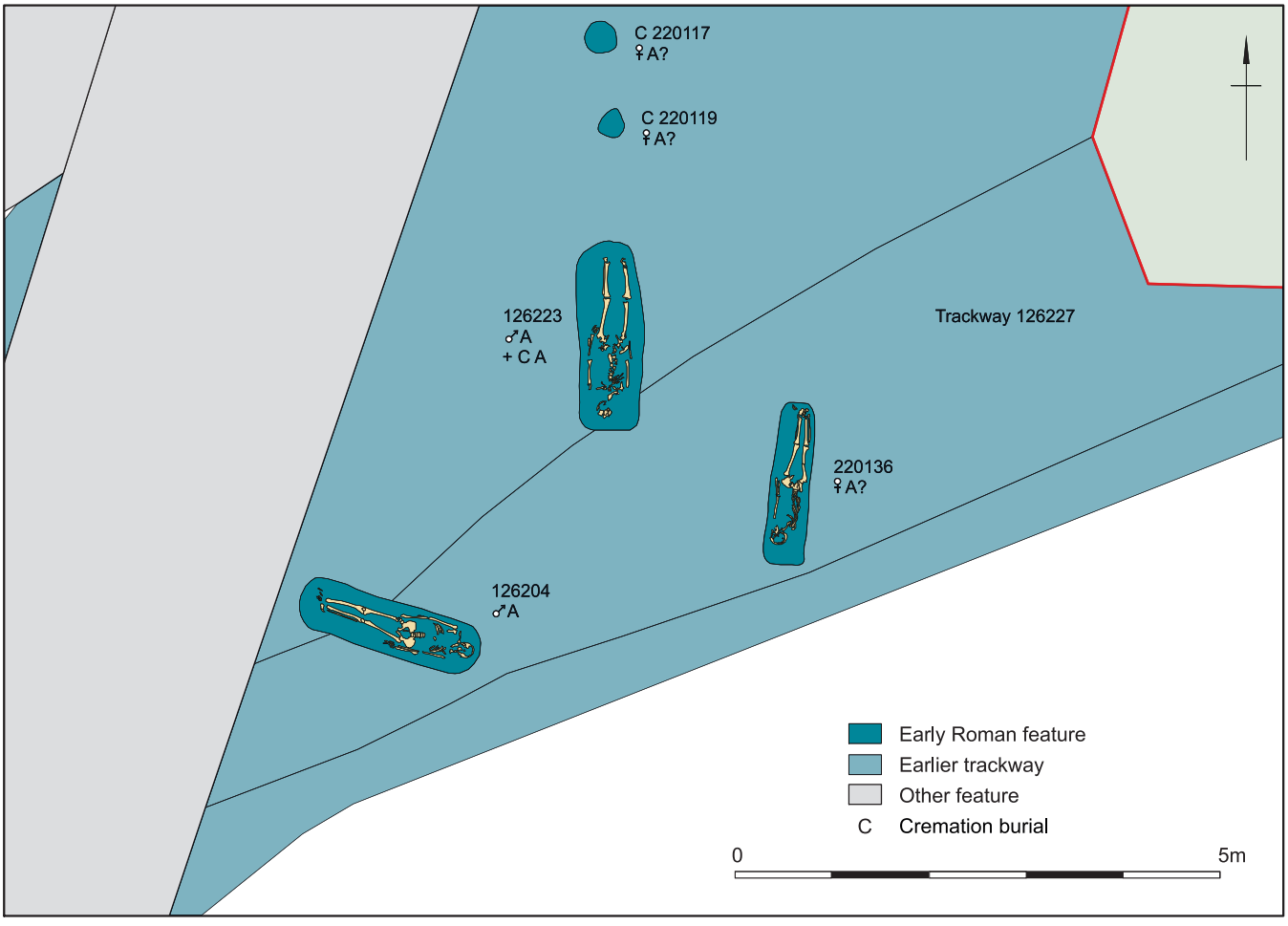


Fig 4.52 Plan of eastern Roman cemetery 126189 (Zone 19)

suggests a main period of use spanning the 1st to 2nd centuries AD with one inhumation burial (176342) extending the use into the 4th century. The limited stratigraphic sequence reflects the general pattern over time of a shift in Roman burial practice from cremation to inhumation burial with, for example, cremation graves 126103 and 126106 (dating to the first half of the 1st century AD) cut by inhumation grave 126100 (of mid-/late 1st century date).

Approximately two-thirds (13) of the cremation burials were urned, and 279096 is particularly noteworthy as the cremated remains had been placed in a 2nd–early 3rd-century vessel that had been repaired using birch bark resin. In total, 16 graves contained pottery vessels which, including urns, ranged in number from one (eight examples) to four (one example); two graves contained three vessels and four graves contained three vessels. Five of the burials were accompanied by grave goods other than pottery, comprising a ring and four brooches, one of the latter also with a pig skull. Hobnails were recovered from one grave. There are also three 'graves' (166077, 193051 and 220068) not described above, but included in the catalogue below, that contained only very small amounts of cremated bone and/or pyre debris, and which can be interpreted as cenotaphs.

Ageing and sexing of the cremation burials showed there to be single infants and juveniles present along with 16 adults, including eight possible females and two possible males.

The inhumation component of the cemetery numbered 11 burials and three 'empty' graves (see below), all located within a fairly limited area to the east of enclosure 249029. The mainly sub-rectangular graves were all were aligned NNE–SSW, apart from three (220060, 248107 and 150097) which were N–S,

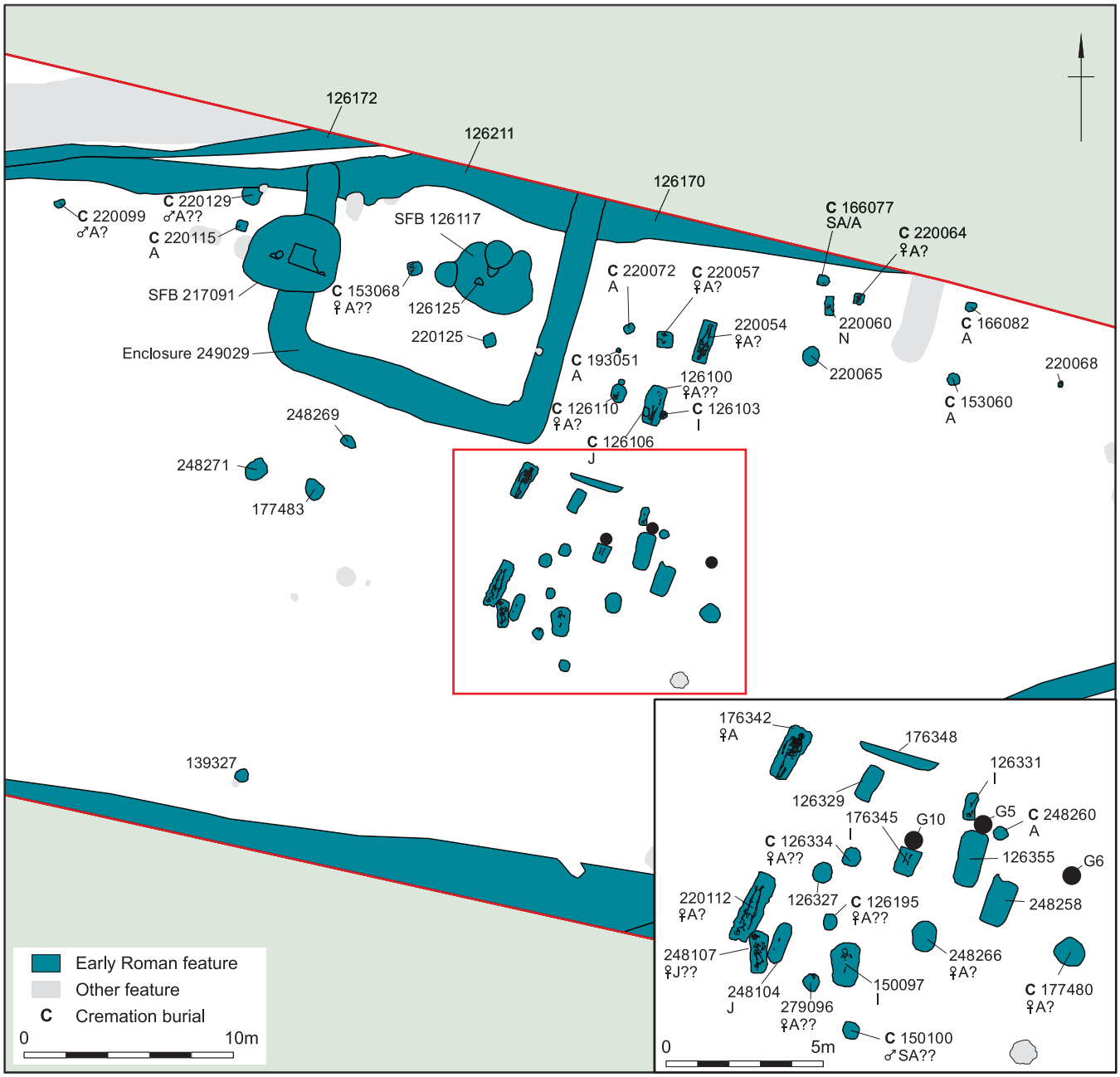


Fig 4.53 Plan of main Roman cemetery 126189 (Zone 19)

and on very limited stratigraphic evidence (for 248107) it might be suggested that these were slightly earlier. However, it may be significant that of these three slightly differently aligned graves, two contained infants and one a neonate. The presence of relatively large nails in several graves indicates that at least six and perhaps as many as nine of the burials had been made in coffins. Of the 11 graves with human remains, one was a neonate, five had poor preservation or little in the way of skeletal material and five had skeletons in a reasonable state of survival. Where it could be established, the bodies had been laid in a supine extended position. In five graves the heads were to the north, and in three, to the south.

Four of the inhumation graves contained single pottery vessels and one (126100) contained two vessels, the only other grave good comprising three copper alloy bracelets from 176342, the 4th-century grave that also contained a New Forest beaker.

Ageing and sexing of the inhumation burials revealed that just five were adults, the remainder comprising a neonate, three infants and a juvenile. Also, no males were identified, the five adults being made up of three certain and two possible females.

Three grave-like features (126329, 126355 and 176348) contained no human remains and the only find was a single nail recovered from 126329. It is possible that these features had contained human remains which decomposed leaving no trace, or the graves may have been robbed in antiquity, but it is perhaps most likely that they were dug but never used, perhaps serving as cenotaphs.

A further, discrete group of five burials (eastern cemetery) to the east of the main cemetery (Figs 4.51 and 4.52) comprised two inhumation burials aligned south-north (126223 and 220136) and one aligned east-west (126204), and two cremation burials (220117 and 220119). The graves were cut through the fills and remnant metalling on trackway 126277, suggesting that they post-dated its use, or at least the southern half of it in this area (its course probably shifted over time).

The two cremation burials, both adult possible females, lay close together and the remains of a third (of an adult) were redeposited in inhumation grave 126223 a short distance to the south, perhaps disturbed during the digging of the latter. This redeposited burial and cremation burial 220119 were contained within grog-tempered vessels for which a Late Iron Age or early Roman date is likely in the former case and certain in the latter.

The inhumation burials were supine and extended with heads to the south, or east in the case of 126204, and comprised two adult males and an adult possible female. Grave 126223 produced a single sherd of Late Iron Age to early Roman pottery whilst grave 126204 contained an iron 'traveller' (effectively a miniature measuring wheel, ON 3633, see below and Vol 2, Scott, Chap 3), an object also characteristically of Late Iron Age–early Roman date, which may have been placed as a grave good.

Grave catalogue

Inhumation burials

Note that not all objects listed in the grave catalogues are illustrated, and that not all were located on the original grave plans.

Grave 126100 (Burial 126101)

Fig 4.54

Grave: NNE–SSW, sub-rectangular with moderate straight sides and a broadly flat but slightly irregular base – 1.98 x 0.95m, 0.3m deep (base at 46.77m OD). Single mid–dark brown sandy clay fill, frequent flint gravel and chalk nodule inclusions. Cuts cremation graves 126103 and 126106 (see below).

Human Remains: Burial supine and extended, coffined, probable gap 0.3m between head and NNE end of grave, *c* 38% skeletal recovery, adult *c* 35–45 yr. ?Female.

Grave Goods:

ON 1270: Grog-tempered ware globular jar/bowl with beaded rim (Thompson 1982, type B1–3), mid-/late 1st century AD. Worn/eroded condition suggests it may have been old at the time of deposition. Context 126102 (from Grave 126106).

ON 1271 SSW end of grave, near right foot. Nail, in two pieces (refit), heavily corroded. L 59mm W 9mm T 11mm.

ON 1272 NNE end of grave. Nail/rivet, L 33mm W 8mm T 9mm.

ON 1273, SE side of grave. ?Nail shaft, heavily corroded. L 24mm W 10mm T 9mm.

ON 1274, SSW end of grave. Nail, 2 pieces, heavily corroded. L 23mm W 9mm T 8mm.

ON 1275, NNE end of grave. Nail, 2 pieces (refit), heavily corroded. L 43mm W 9mm T 10mm (measurements of largest piece).

ON 1276, NNE end of grave. ?Nail, heavily corroded. L 59mm W 15mm T 10mm.

ON 1277, NNE end of grave. ?Nail(s) 2 pieces (refit), corroded onto each other perpendicularly. L 27mm.

ON 1278, NNE end of grave. ?Possible nail, heavily corroded. L 45mm W 13mm T 12mm.

ON 1279, NNE end of grave, Small nail fragment. L 25mm W 16mm T 12mm.

ON 1280, SSW end of grave. ?Nail, heavily corroded, mineral preserved wood. L 75mm W 9mm T 11mm.

ON 1281, SSW end of grave. Nail, heavily corroded. L 34mm W 7mm T 7mm.

ON 1282: Greyware everted rim jar (Monaghan 1987 type 3H2), AD 150–250/300. Rim is oval in plan, perhaps deliberately as there are no traces of other firing errors, and has become much chipped through use. Context 126101.

ON 1283, NNW end of grave. ?Nail, 36mm W 14mm T 11mm.

ON 1284, NNE end of grave. ?Nail, 2 pieces, heavily corroded. L 59mm W 13mm T 9mm (measurements from largest piece).

Grave 126204 (Burial 126205)

Fig 4.55

Grave: ESE–WNW sub-rectangular cut with moderate straight sides, flat base – 1.95 x 0.58m, 0.22m deep (base at 45.73m OD). Fill of mid-brown silty loam with occasional flint inclusions.

Human Remains: Burial supine and extended, probable gap 0.1m between head and ESE end of grave, *c* 85% skeletal recovery, adult >45 yr. Male.

Grave Goods:

ON 3633 Fe disc. D: 78mm thinning to outer edge; central hole (D: *c* 13mm) with non-ferrous collar or lining. Incomplete circumference, no clear notches. Encrusted. Possible 'traveller' (not illustrated).

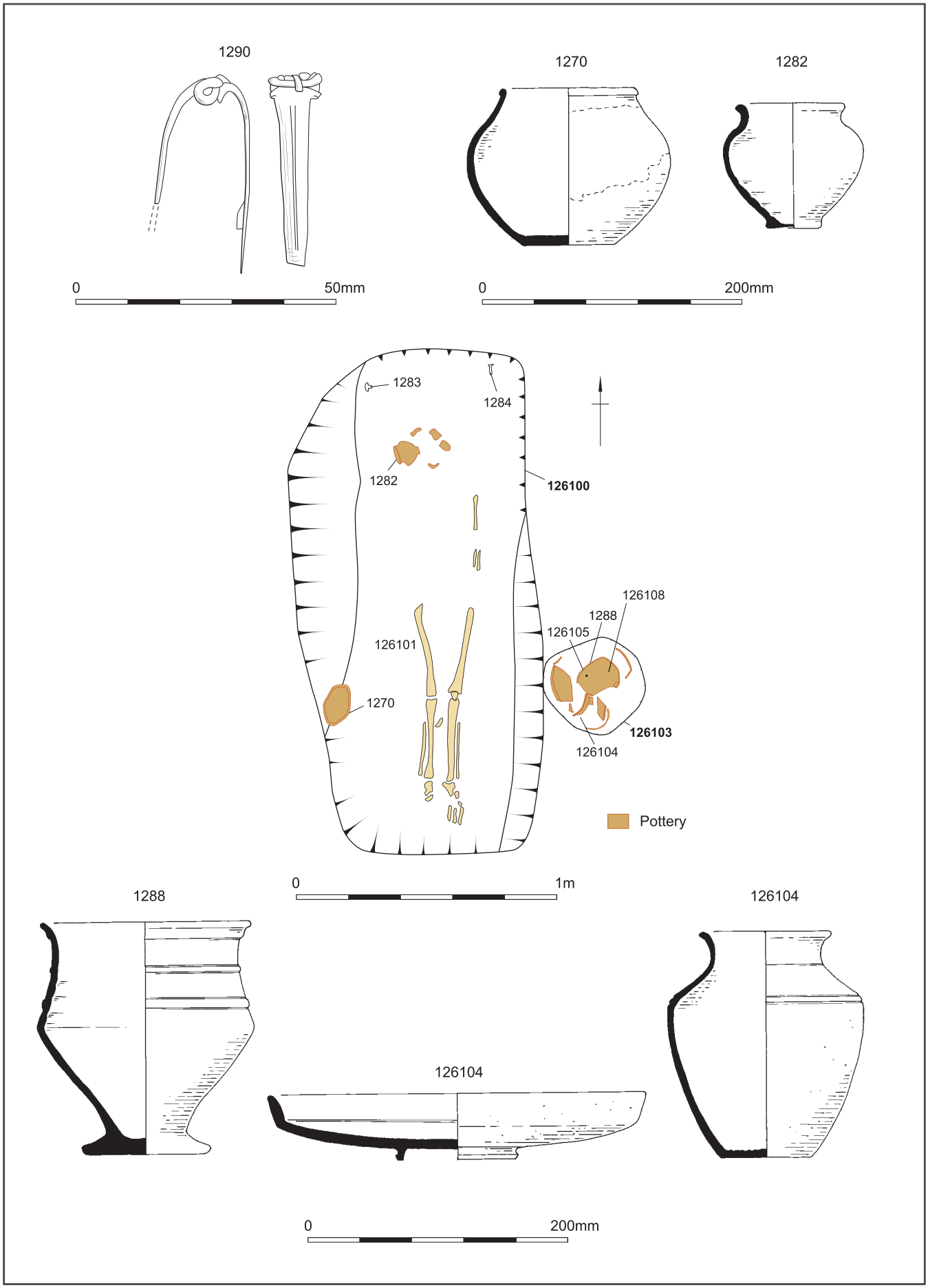


Fig 4.54 Plan of grave 126100 and cremation grave 126103 (Zone 19)

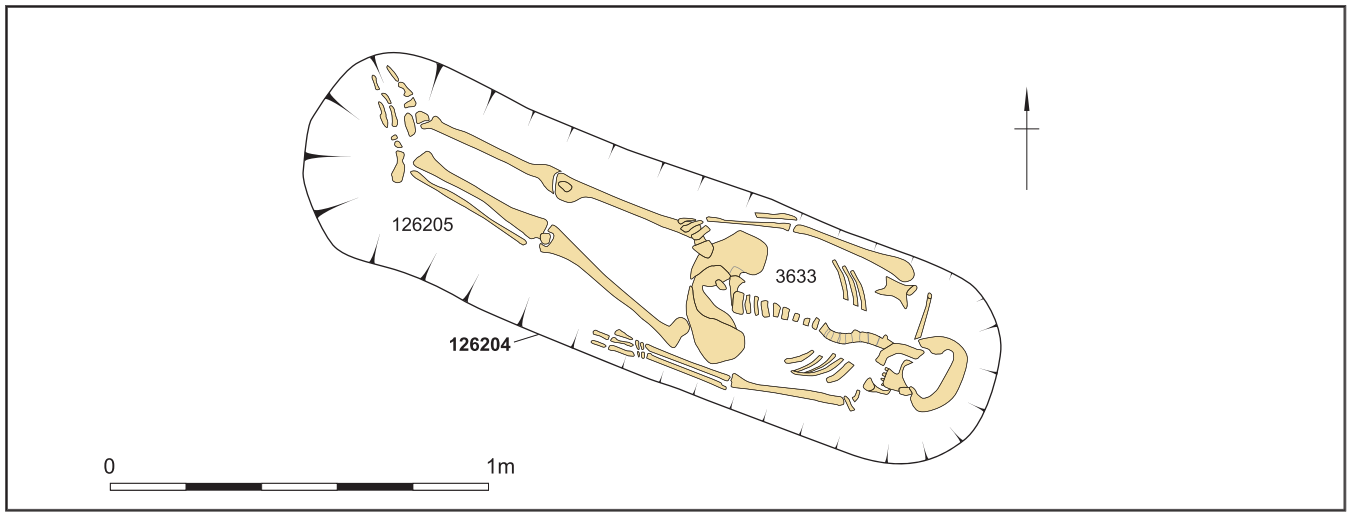


Fig 4.55 Plan of grave 126204 (Zone 19)

Grave 126223 (Burial 126224)
Fig 4.56
Grave: N–S, sub-rectangular cut with steep straight sides and a broadly flat base, sloping to the south – 1.93 x 0.7m, 0.25m deep (base at 46.31m OD). Fill of mid-brown sandy silt with occasional flint inclusions.
Human Remains: Burial supine and extended, probable gap 0.1m between head and south end of grave, *c* 90% skeletal recovery, adult >45 yr. Male. Also 85.1g of cremated bone, >45 yr. adult.
Grave Goods:
ON 3634 Pot, 26 sherds, 320g, grog-tempered ware, base and lower body of a jar. AD 40–400.

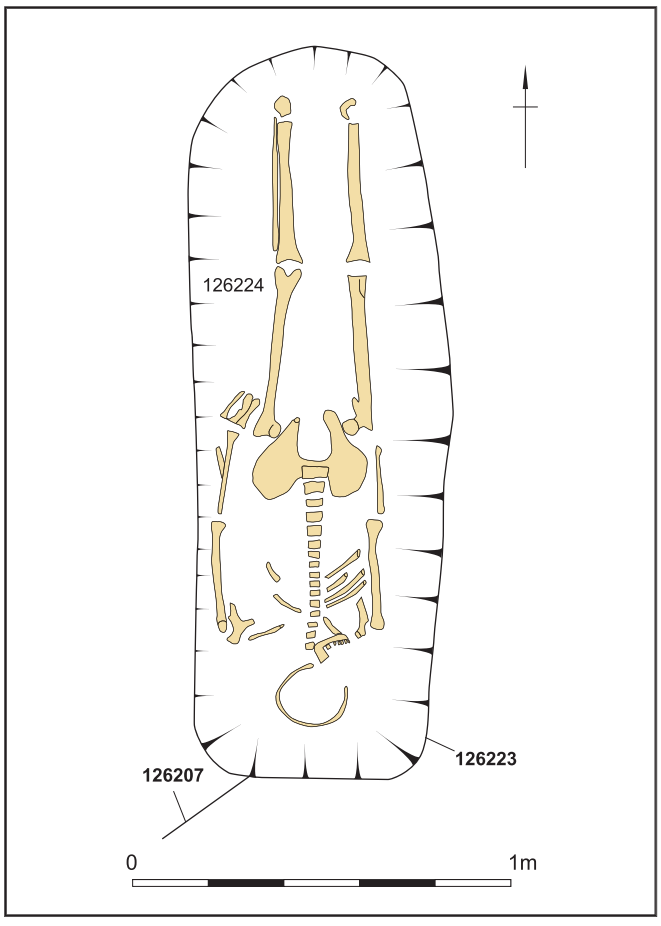


Fig 4.56 Plan of grave 126223 (Zone 19)

Also 1 sherd (14g) sand and flint tempered plain body sherd, 100 BC–AD 100.

Grave 126331 (Burial 126332)
Not illus
Grave: NNE–SSW, sub-rectangular cut with steep irregular sides and irregular base – 0.9 x 0.45m, 0.26m deep. Fill of mid-brown silty clay loam with common chalk and occasional flint inclusions.
Human Remains: Burial supine with head facing west, probable gap 0.25m between head and SSW end of grave, *c* 20% skeletal recovery, infant *c* 1–2 yr.

Grave 150097 (Burial 150099)
Fig 4.57
Grave: N–S, sub-rectangular cut with steep sides and a broadly flat but slightly irregular base, 1.42 x 0.96m, 0.48m deep (base

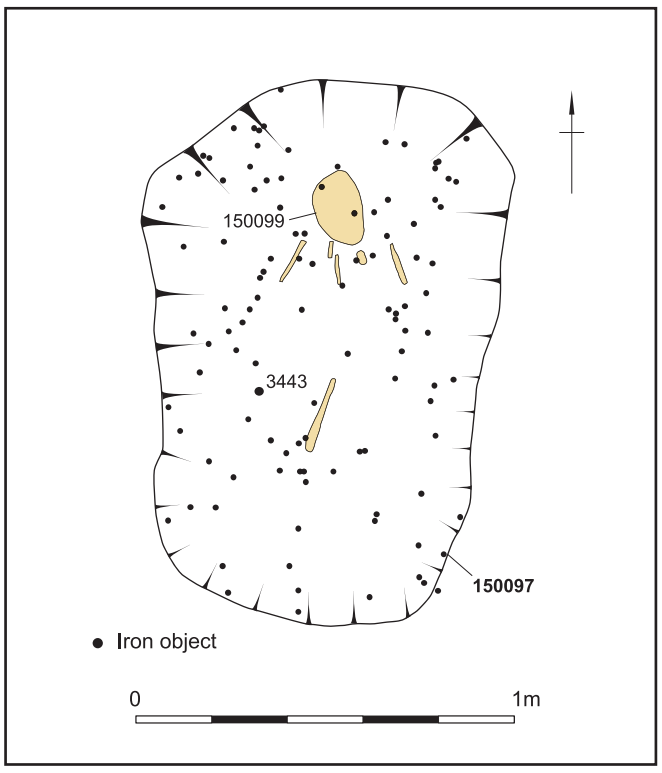


Fig 4.57 Plan of grave 150097 (Zone 19)

at 46.04m OD). Fill of dark brown silty clay loam with common chalk inclusions.
Human Remains: Burial supine and extended, coffined, probable gap *c* 0.15m between head and N end of grave, *c* 45% skeletal recovery, infant *c* 3.5–4.5 yr.
Coffin fittings and grave goods:
ON 2099 Nail, Fe, 2 fragments, square sectioned.
ON 3400 Strip, Fe, 3 joining pieces from a strip, probably used as a bracket for a wooden box.
ON 3401 Possible joiner's dog, fragment, Fe.
ON 3402 Rod/shank, Fe, uncertain identification.
ON 3403 Rod/shank Fe, ?nail.
ON 3404 Rod/shank, Fe, bent at right angles.
ON 3405 Rod/shank, Fe.
ON 3406 Rod/shank, Fe, possible nail, ?coffin fitting.
ON 3407 Rod/shank, Fe, ?nails, one bent at 90° angle.
ON 3408 Rod/shank, Fe, nail.
ON 3409 Strip, Fe, fragments probably from bracket for box, joins ON 3416.
ON 3410 Strip, Fe, fragment from a box fitting, possible binding.
ON 3413 Rod/shank, Fe, coffin nail?
ON 3414 Nail, Fe, 2 fragments, ?coffin nail.
ON 3415 Rod/shank, Fe, 2 fragments, ?coffin fitting.
ON 3416 Strip, Fe, strip fragment, joins ON 3409, probable fitting for a box.
ON 3417 Rod/shank, Fe, ?nail.
ON 3418 Rove and bolt, Fe, short bolt and rove.
ON 3419 Rod/shank, Fe, ?coffin nail.
ON 3420 Rod/shank, Fe, 4 fragments, ?coffin nails, mineral-preserved wood.
ON 3421 Nail, Fe, 2 fragments, ?coffin fittings.
ON 3422 Nail, Fe, 1 x nail, 2 x rod/shank.
ON 3425 Nail, Fe, nail head and 3 rod/shank fragments.
ON 3426 Nail, Fe, nail head and shaft fragments.
ON 3427 Nail, Fe, nail and 2 shank fragments.
ON 3428 Unidentified, Fe, lump with possible mineralised wood attached, ?nail head.
ON 3443 Coin, Cu alloy.
ON 3445 Rod/shank, Fe,?nail.
ON 3446 Rod/shank, Fe, 2 fragments.
ON 3447 Nail, Fe, fragments ?coffin nail.
ON 3455 Rod/shank, Fe, square sectioned shaft, ?nail.
ON 3481 Shank, Fe, nail shank.
ON 3482 Shank, Fe, possible nail shank.
ON 3483 Nail, Fe, small nail head.
ON 4638 Nail, Fe, incomplete nail with mineral-preserved wood.
ON 4685 Rod/shank, Fe, possible nail shaft, mineralised wood.
ON 4768, Nail, Fe, possible nail shaft.
3 sherds (19g) Sand- and flint-tempered body sherds. 400 BC–AD 40.

This material is distributed across the grave in no discernible pattern, so the numerous fragments are not identified individually on the plan. Some of the material may have been incorporated incidentally in the grave fill rather than intentionally deposited with the burial

Grave 176342 (Burial 176343)
Fig 4.58
Grave: NE–SW, sub-rectangular with moderate straight sides and a broadly flat but slightly irregular base – 1.77 x 0.77m, 0.15m deep (base at 46.43m OD). Fill of mid-greyish brown silty clay loam with frequent chalk inclusions.
Human Remains: Burial supine and extended, head facing SE, coffined, probable gap 0.2m between head and NE end of grave, *c* 85% skeletal recovery, adult *c* 30–35 yr. Female.
Grave Goods:
ON 3635: New Forest colour-coated ware folded and indented, globular beaker (Fulford 1975 type 33), 4th century AD (base only). Context 176343.
ON 3636: Bracelet, Cu alloy, simple wire bracelet/armlet with twisted terminals, AD 200–400, On SE side of grave.
ON 3637: Bracelet, Cu alloy, wire bracelet/armlet, AD 200–400, on SE side of grave.
ON 3638: Bracelet, Cu alloy, penannular bracelet, AD 40–400, on SE side of grave.
ON 4637: Unidentified, Fe, small disc, found near skull.

Grave 176345 (Burial 176346)
Fig 4.59
Grave: N–S, sub-rectangular with moderate concave sides and a flat base – 0.72 x 0.7m, 0.16m deep (base at 46.31m OD). Northern part truncated by modern pipeline. Fill of mid-greyish brown silty loam with frequent chalk inclusions.
Human Remains: Burial supine and extended, coffined, *c* 12% skeletal recovery, infant *c* 2–3 yr.
Grave Goods:
ON 3644 Rod/shank, Fe, ?nail.
ON 3645 Rod, Fe, 2 crossing fragments, possibly from a chatelaine.
ON 3646 Nail, Fe, small bent nail.

Grave 220054 (Burial 220056)
Fig 4.60
Grave: NNE–SSW, sub-rectangular with steep straight sides and a flat base – 2.1 x 0.68m, 0.45m deep. Mid-brown sandy silt fill, frequent chalk nodule inclusions.
Human Remains: Burial supine and extended, coffined, probable gap 0.2m between head and SSW end of grave, *c* 90% skeletal recovery, adult *c* 40–50 yr. Female.
Grave Goods:
ON 1235 Rod/shank, Fe, 4 fragments, possible nail.
ON 1236 Nail, Fe, 3 fragments.
ON 1237 Nail, Fe, 4 fragments.
ON 1238 Nail, Fe, 2 fragments.
ON 1239 Nail, Fe, 3 fragments.
ON 1240 Nail, Fe, 2 fragments.
ON 1246: Greyware miniature pear-shaped flask with moulded flared rim. Capacity *c* 190ml but does not pour well.
ON 1248 Nail, Fe, 2 fragments.
ON 1249 Rod/shank, Fe, also an unidentified lump.
ON 1250 Rod/shank, Fe, possibly from keys or chatelaine.
ON 1253 Nail, Fe.
ON 1254 Nail, Fe, mineral-preserved wood.
ON 1255 Rod/shank, Fe.
ON 1256 Rod/shank, Fe, mineral-preserved wood.
ON 1257 Rod/shank, Fe, 2 fragments.

Grave 220060 (Burial 220062)
Not illus
Grave: N–S, sub-rectangular with moderate straight to convex sides and a flat base, N and S sides are stepped – 0.9 x 0.4m, 0.24m deep (base at 46.93m OD). Mid-brown sandy silt fill, frequent chalk nodule inclusions.
Human Remains: Burial position unknown, head at S end of grave, *c* 10% skeletal recovery, neonate *c* 3 mth.

Grave 220112 (Burial 220113)
Fig 4.61
Grave: NE–SW, sub-rectangular with steep straight sides stepped on NE and SW sides, flat base – 2.4 x 0.68m, 0.48m

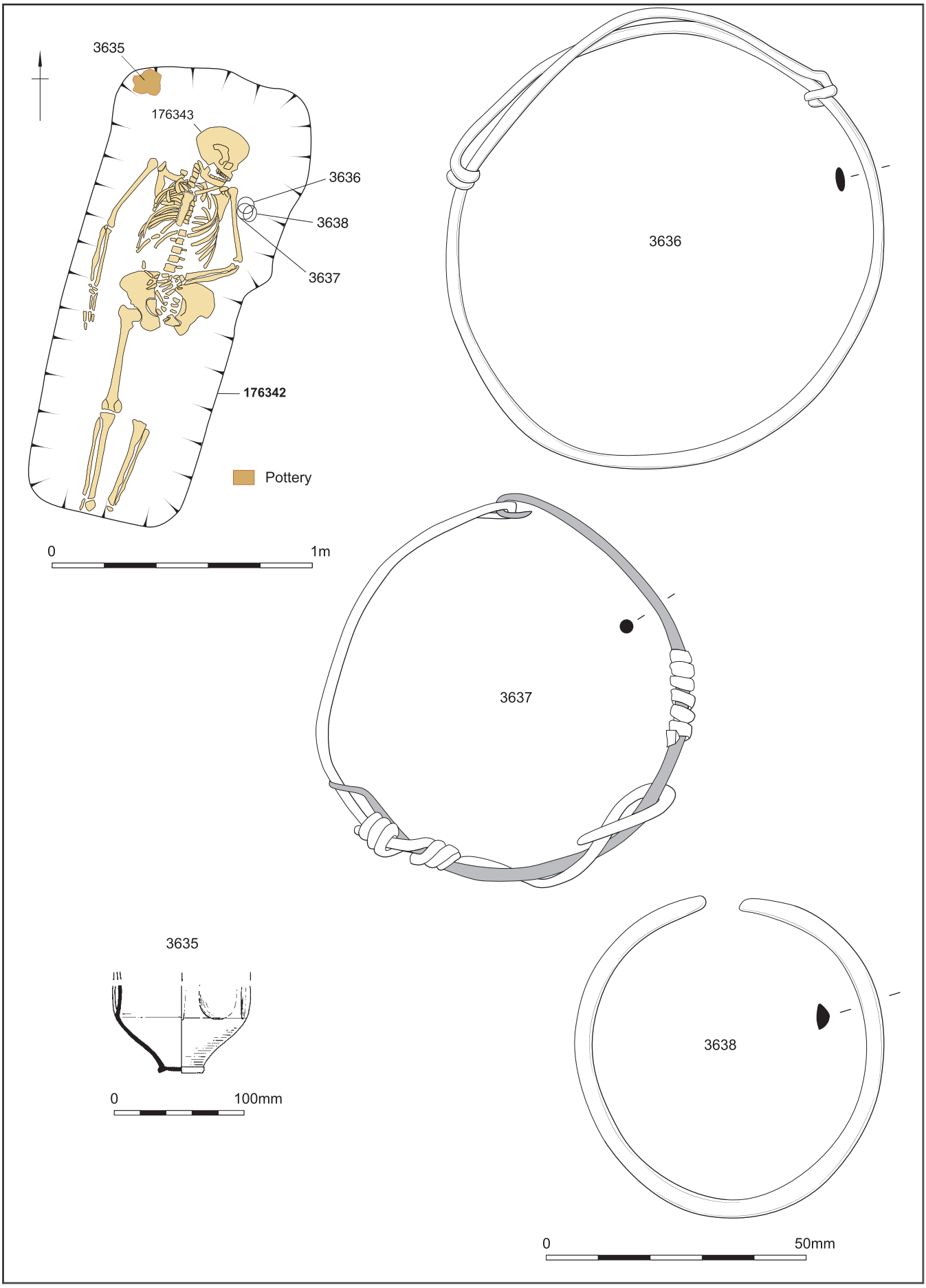
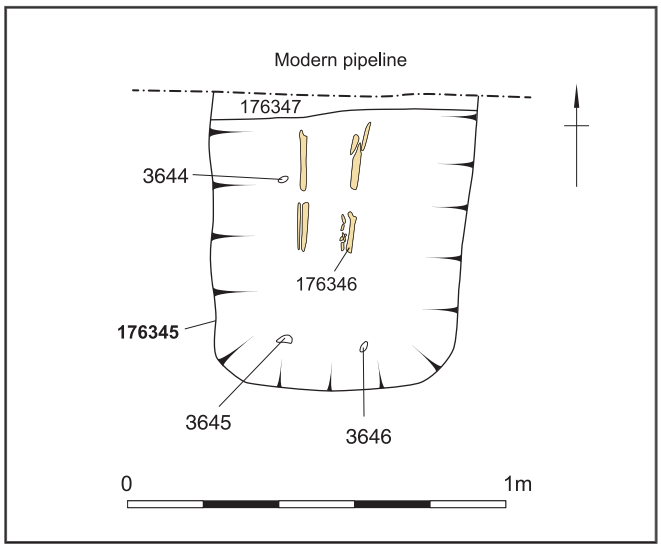
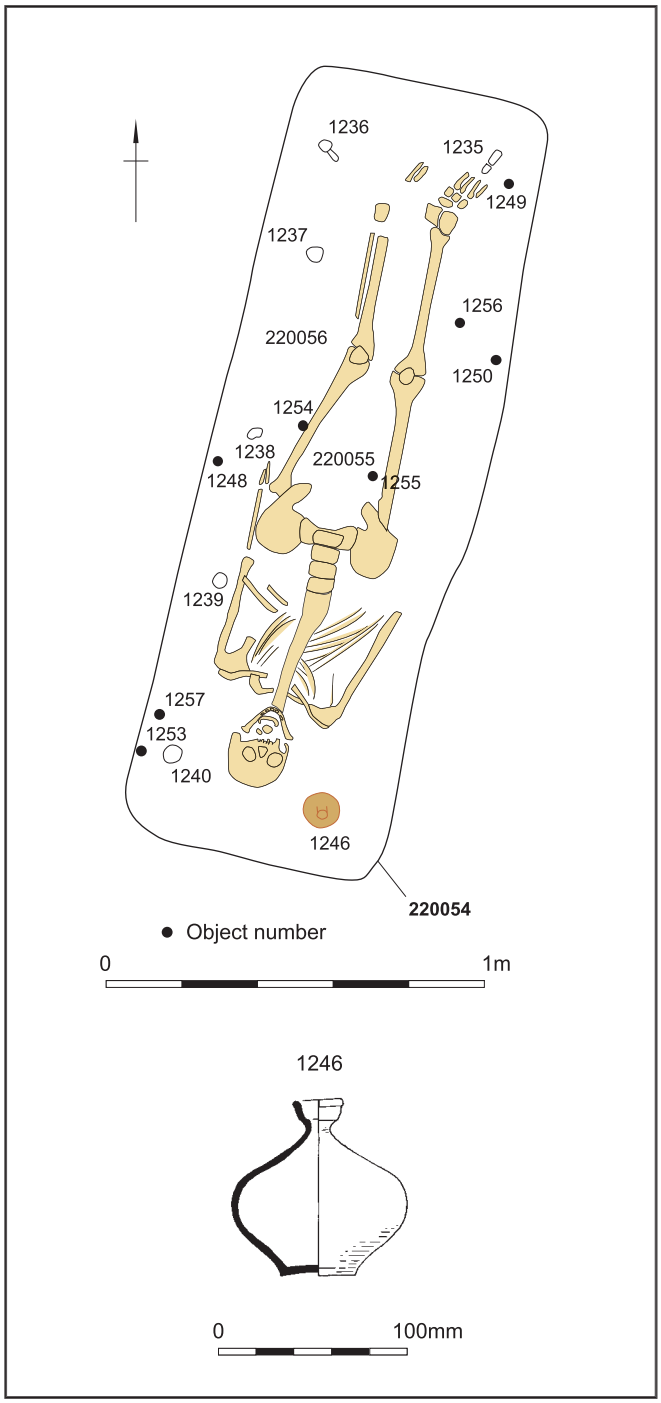


Fig 4.58 Plan of grave 176342 (Zone 19)





deep (base at 46.18m OD). Fill of mid-brown sandy silt loam with frequent chalk inclusions.
Human Remains: Burial supine and extended with lower right arm across pelvis, coffined, probable gap 0.05m between head and SW end of grave, *c* 70% skeletal recovery, adult *c* 40–50 yr. Female.
Grave Goods:
ON 3610-13 Nails and nail fragments, Fe.
ON 3614 Unidentified, Fe, plate and strip.
ON 3615 Nail or spike, Fe.
ON 3616 Nail, Fe, bent at 90°.
ON 3619–29 Nails and nail fragments, Fe.
ON 3628 bis Joiners dog, Fe.

Grave 220136 (Burial 220137)
Not illus
Grave: NNE–SSW, sub-rectangular cut with shallow to moderate straight sides, irregular base – 1.75 x 0.44m, 0.14m deep (base at 46.17m OD). Fill of mid-brown sandy silt with occasional chalk inclusions.
Human Remains: Burial supine and extended, probable gap 0.05m between head and SSW end of grave, *c* 60% skeletal recovery, adult *c* 40–50 yr. ?Female.

Fig 4.59 (above left) Plan of grave 176345 (Zone 19)

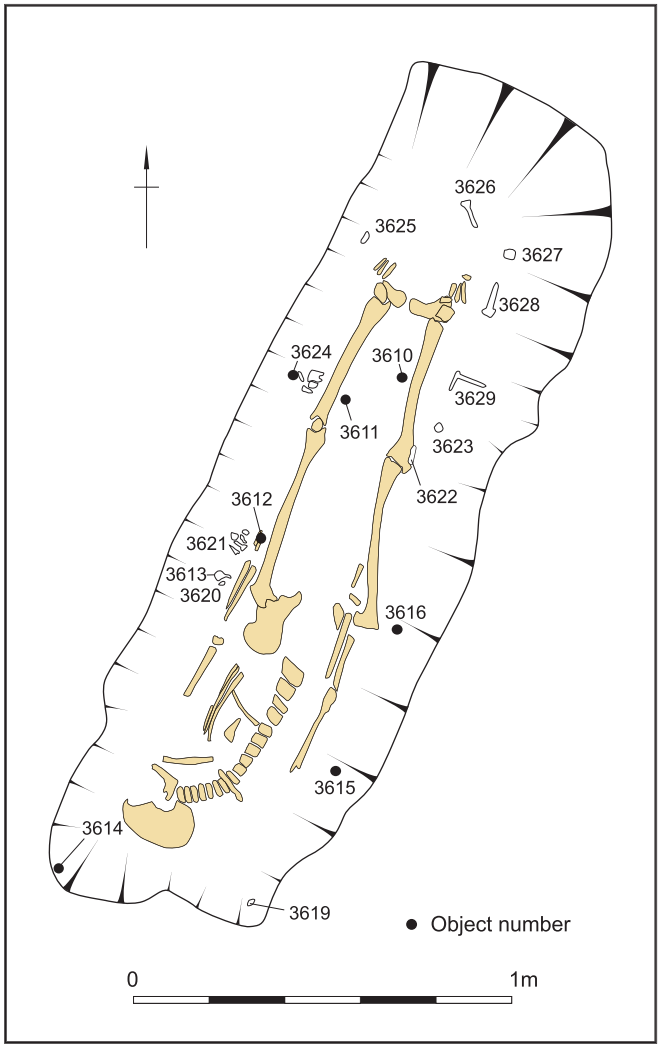


Fig 4.61 (above) Plan of grave 220112 (Zone 19)

Fig 4.60 (left) Plan of grave 220054 (Zone 19)

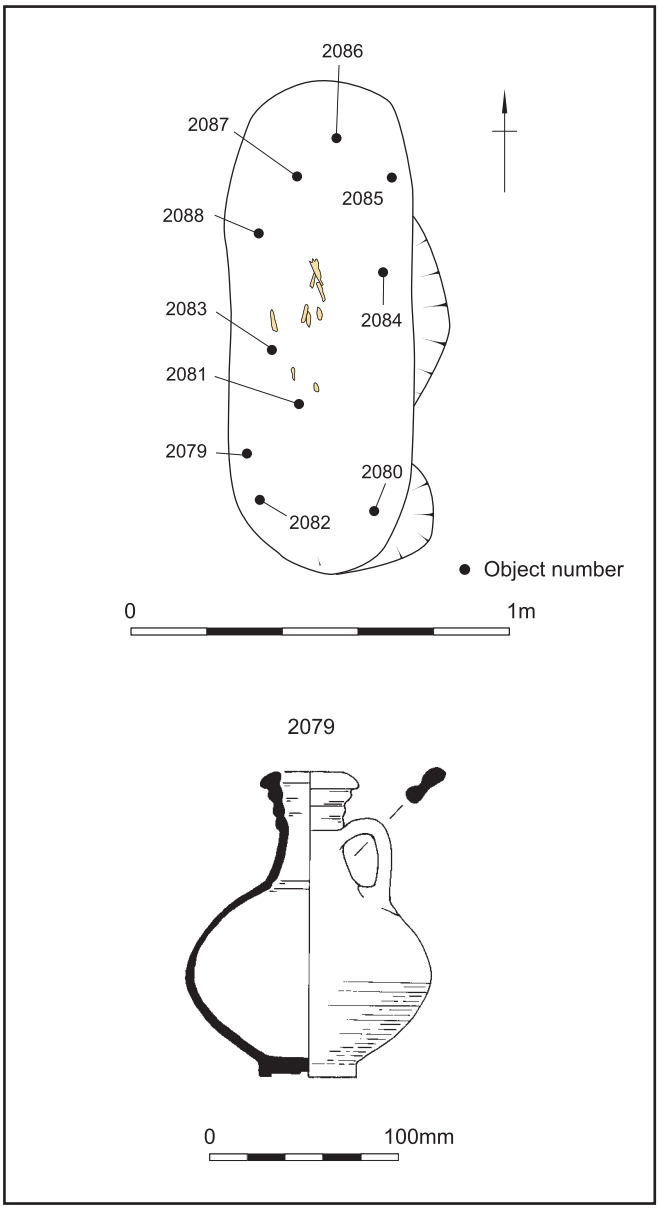


Fig 4.62 Plan of grave 248104 (Zone 19)

Grave 248104 (Burial 248106)
Fig 4.62
Grave: N–S, sub-rectangular with steep straight sides, irregular concave base – 1.3 x 0.49m, 0.25m deep (base at 46.17m OD). Fill of brown sandy clay loam with some chalk and occasional flint inclusions.
Human Remains: Burial position not known, coffined, *c* 2% skeletal recovery, juvenile *c* 9–10 yr.
Grave Goods:
ON 2079: Verulamium region whiteware ring-necked flagon (Marsh and Tyers 1979, 549, fig 232, type IB2), AD 70–120. Capacity 600ml.
ON 2080 Nail, Fe, head and shank fragments.
ON 2081 Rod/shank, Fe, 2 ?nail fragments.
ON 2082 Nail, Fe, shank and nail head.
ON 2083 ?Nail, Fe.
ON 2084 Rod/shank, Fe, fragments.
ON 2085 Nail, Fe.
ON 2086 Rod/shank, Fe, uncertain if part of nail or chatelaine.
ON 2087 Rod/shank, Fe, uncertain.
ON 2088 Nail, Fe, ?refitting fragments.

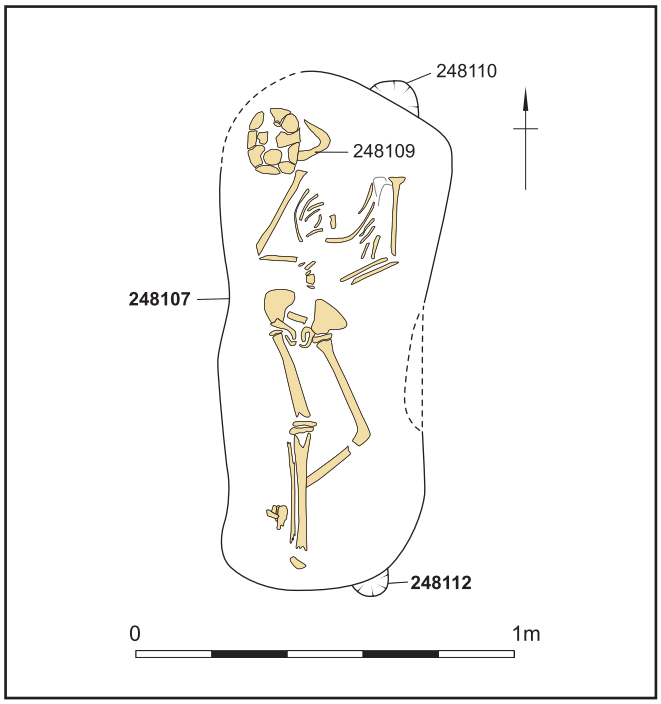


Fig 4.63 Plan of grave 248107 (Zone 19)

Grave 248107 (Burial 248109)
Fig 4.63
Grave: N–S, sub-rectangular with steep straight sides and irregular base, significantly deeper in the W – 1.37 x 0.6m, 0.48m deep (base at 46.01m OD). Postholes 248110 in N and 248112 in S, possible grave markers. Fill of greyish brown sandy clay loam with occasional flint inclusions.
Human Remains: Burial supine and extended, some post-depositional movement probable. Skull is at a higher level than the rest of the skeleton. Probable gap 0.05m between head and N end of grave, *c* 75% skeletal recovery, juvenile *c* 10–11 yr.

Grave 248266 (Burial 248268)
Not illus
Grave: sub-rectangular, N and S ends truncated, steep straight sides, irregular base, deeper in N and E – 0.8 x 0.8m, 0.16m deep (base at 46.36m OD). Fill of mid-brown sandy clay loam with some chalk and occasional flint inclusions.
Human Remains: Burial position not known, *c* 10% skeletal recovery, adult *c* 35–50 yr. ?Female.
Grave Goods:
ON 3647 Nail, Fe, 2 nail and 1 rod/shank.

Cremation burials
Grave 126103 (Burial 126104/8)
Fig 4.54
Grave: Sub-circular with steep straight sides, concave base – 0.4 diameter, 0.16m deep (base at 42.29m OD). Fill of light brown silty loam with frequent chalk nodule inclusions.
Human Remains: Urned, 36.4g, infant *c* 2–3 yr.
Grave Goods:
ON 1288: Grog-tempered ware pedestal bowl (Thompson 1982, type F3–4), used as container for the cremated human remains, 1st century BC–1st century AD. Context 126104.
Grog-tempered ware platter (Thompson 1982, type G1–1), first half of 1st century AD. Context 126104.
Grog-tempered ware carinated jar (Thompson 1982, type B1–1), late 1st century BC–late 1st century AD. Context 126104.

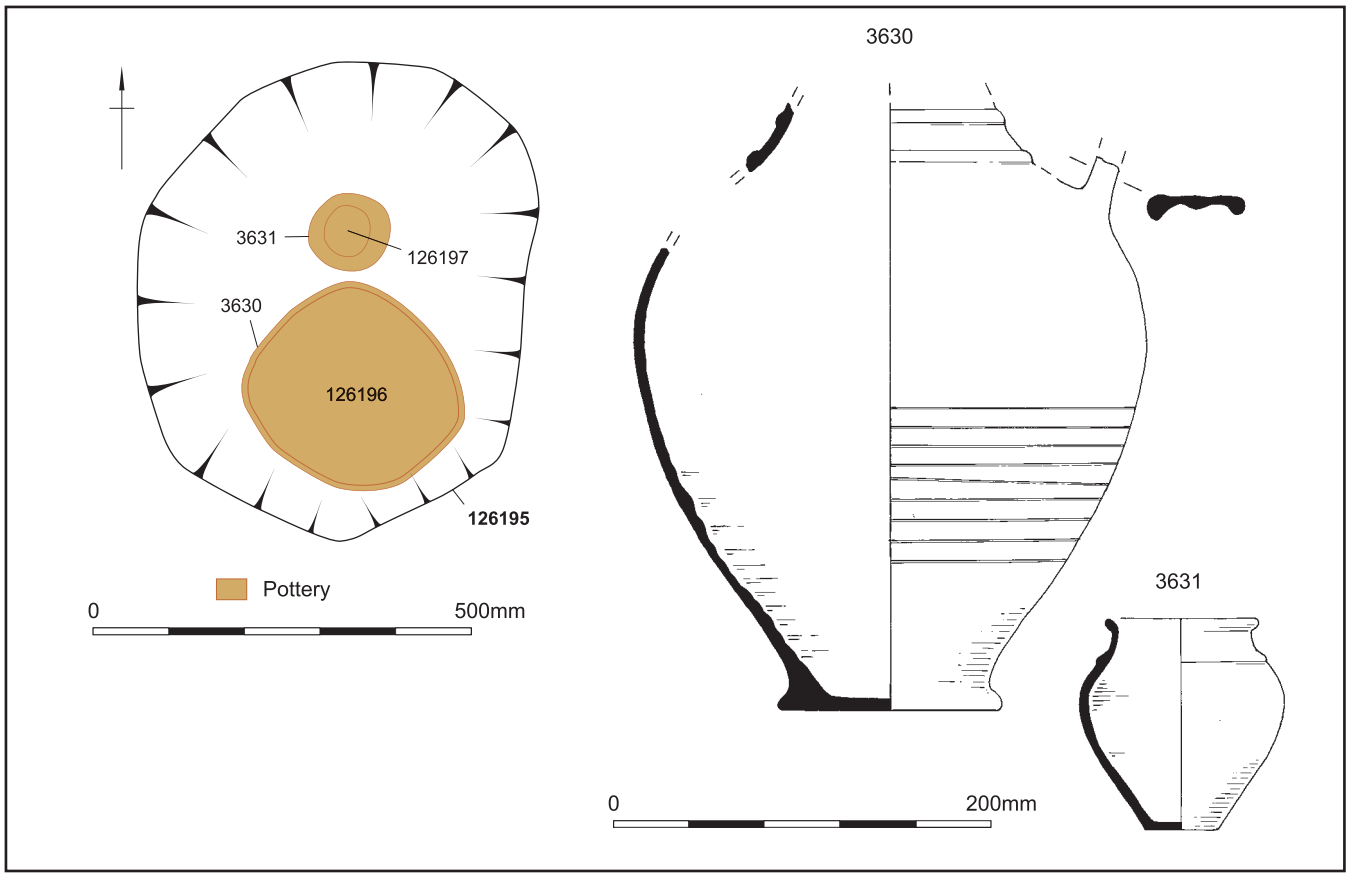


Fig 4.64 Plan of cremation grave 126195 (Zone 19)

Grave 126106 (Burial 126107)
Fig 4.54
Grave: Sub-rectangular with shallow sides and flat base – 0.38 x 0.2m, 0.2m deep (base at 46.57m OD). Cut by inhumation grave 126100 (see above). Fill of light brown silty loam with frequent chalk inclusions.
Human Remains: ?urned burial, 51.5g, juvenile *c* 7–12 yr.
Grave Goods:
ON 1270 Pot, globular jar/bowl with beaded rim, grog-tempered. AD 35–100. (See Grave 126100).
ON 1290 Brooch, Cu alloy bow brooch with flat slightly ridged bow, *c* 10 BC to AD 50/60.

Grave 126110 (Burials 126111 and 126112)
Not illus
Grave: Sub-circular with steep straight sides, irregular base – 0.9 x 0.75m, 0.32m deep (base at 46.71m OD) Fill of mid-brown silty loam with few inclusions.
Human Remains: Unurned – 464.8g, adult *c* 30–40 yr. ?Female.

Grave 126195 (Burial 126196)
Fig 4.64
Grave: Sub-circular with steep straight sides, concave base – 0.4m diameter, 0.16m deep (base at 42.29m OD). Fill of light brown silty loam, occasional flint and chalk nodule inclusions.
Human Remains: Urned, 735.6g, adult *c* 35–45 yr. ??Female.
Grave Goods:
ON 3630: Cremation urn. Grog-tempered ware (Patchgrove-type oxidised surfaces, grey core) globular-bodied flagon or handled jar, first half of 1st century AD. Context 126198.
ON 3631: Grog-tempered ware necked, cordoned jar (Thompson 1982, type B1–3), 1st half of 1st century AD. Context 126198.

Grave 126223 (Burial 126225)
Not illus
Grave: Redeposited in inhumation grave 126223.
Human Remains: ?Urned, 85.1g, adult >45 yr.
Grave goods
ON 3634: Grog-tempered ware flat base and lower body of a jar, used as container for the cremated human remains, probably early Roman.

Grave 126334 (Burial 126342 and 126337)
Fig 4.65
Grave: Sub-circular with irregular sides, flat base – 0.65 x 0.57m, 0.14m deep (base at 46.38m OD). Fill of mid-brown silty loam, frequent charcoal inclusions.
Human Remains: 126342 – Unurned, 369g, adult >45 yr. ?Female.
126340 – ?token/accessory deposit, 39g.
126337 – 'token' accessory deposit/accidental inclusion, 1.4g, infant >5 yr.
Grave Goods:
ON 3639 Grog-tempered ware (Patchgrove-type oxidised surfaces, grey core) butt beaker (Thompson 1982, type G5–5), AD 1–50. Capacity *c* 850ml. Context 126336.
ON 3640 Sandy ware cup (similar to Thompson 1982, type G3–1), AD 10–70. Capacity *c* 180ml. Context 126338.
ON 3641 Grog-tempered ware platter (Thompson 1982, type G1–6), mid–late 1st century AD. Context 126340.

Grave 150100 (Burials 150101/150103)
Fig 4.66
Grave: Sub-circular with vertical straight sides, concave base – 0. 56 x 0.53m, 0.13m deep (base at 46.28m OD). Fill of mid-

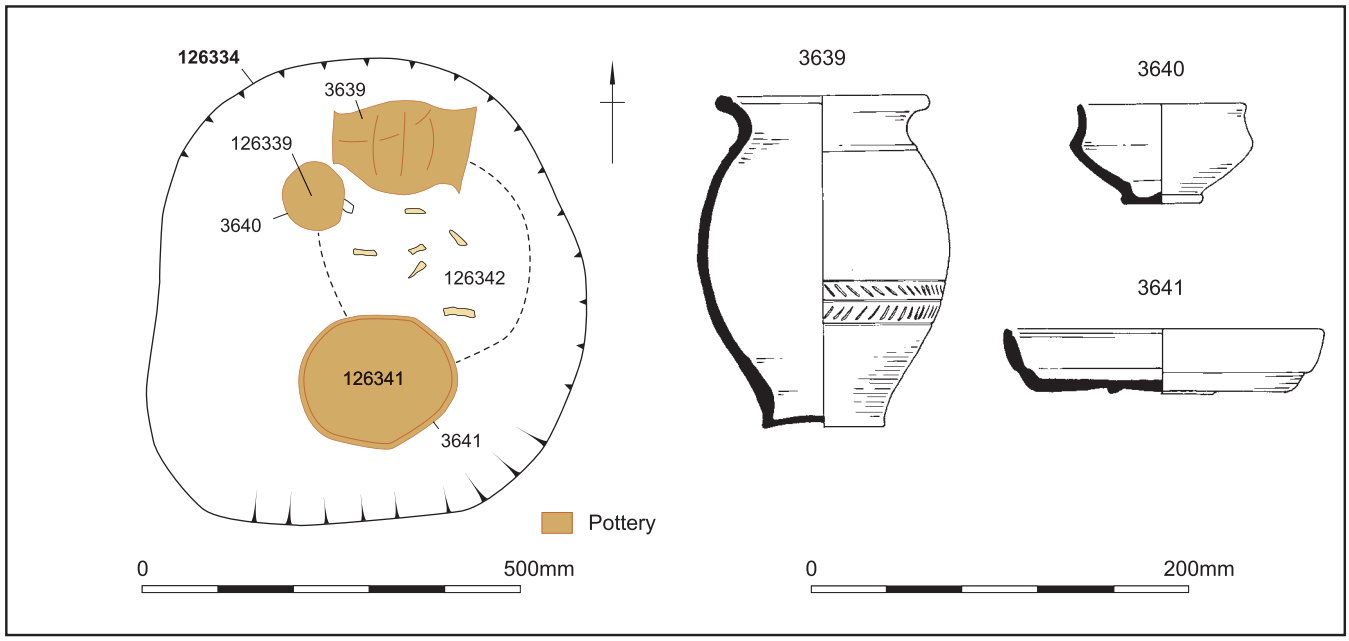


Fig 4.65 Plan of cremation grave 126334 (Zone 19)

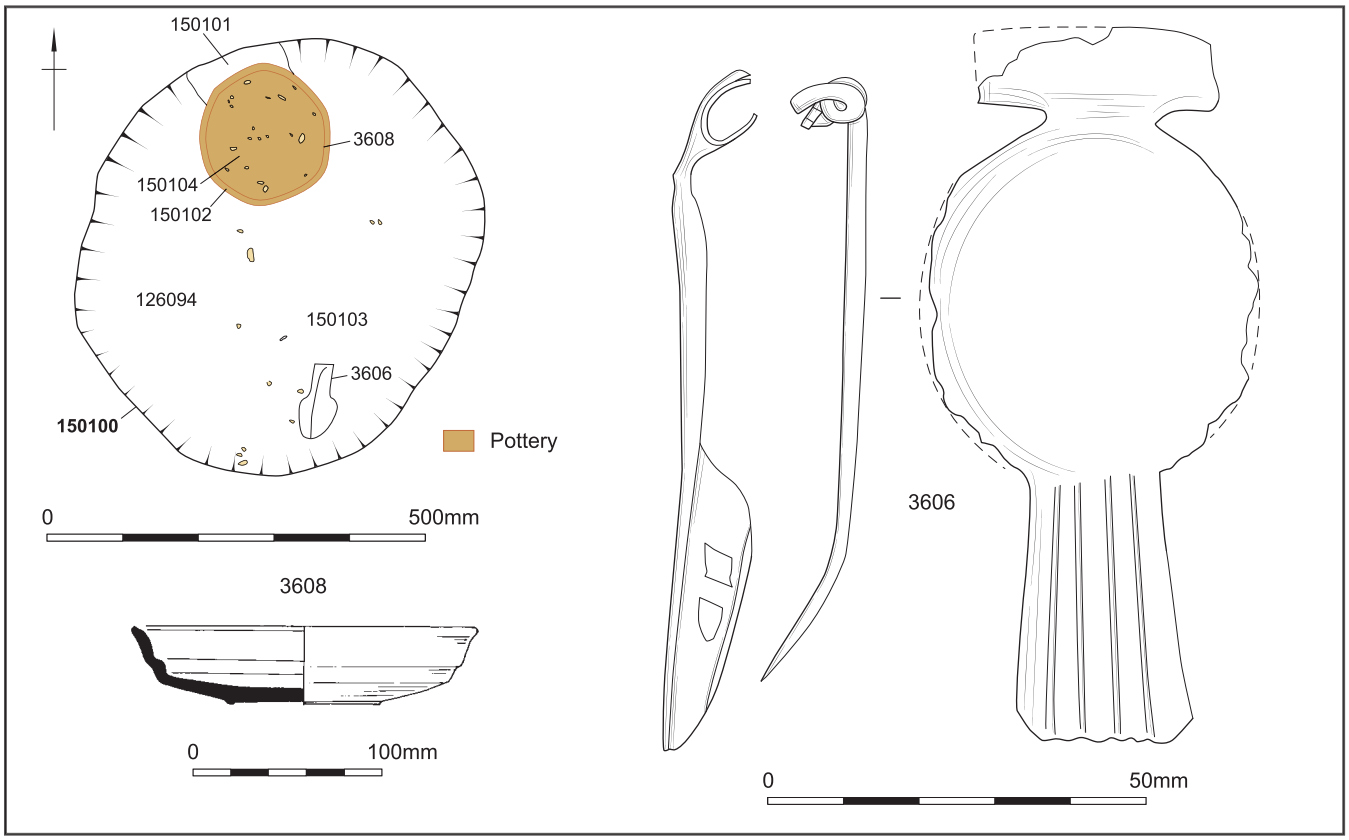


Fig 4.66 Plan of cremation grave 150100 (Zone 19)

brown silt, frequent small chalk inclusions.
Human Remains: Unurned burial, 146.3g, subadult *c* 14–18 yr. ?Male.
Grave Goods:
ON 3606 Brooch, Cu alloy, very large rosette brooch. AD 40–70.
ON 3608 Grog-tempered ware platter (Thompson 1982, type G1–6), mid–late 1st century AD. Single chip in rim. Context 150102.
ON 3618 Nail fragment, Fe.
Nail, Fe, from sample 8118 residue.

Grave 153060 (Burials 153061 and 153064)
Fig 4.67
Grave: Sub-square with steep irregular sides, irregular concave base – 0. 64 x 0.6m, 0.2m deep (base at 46.75m OD). Fill of dark brown silt, charcoal inclusions.
Human Remains: ?Urned burial – 150.5g, adult >20 yr.
Grave Goods:
Nail and nail fragments from sample.
Animal bone (8 x 22g).
ON 1268: Central Gaulish samian form 18/31, stamped by Malledo of Lezoux (Stamp cat no 16; Hartley and Dickinson

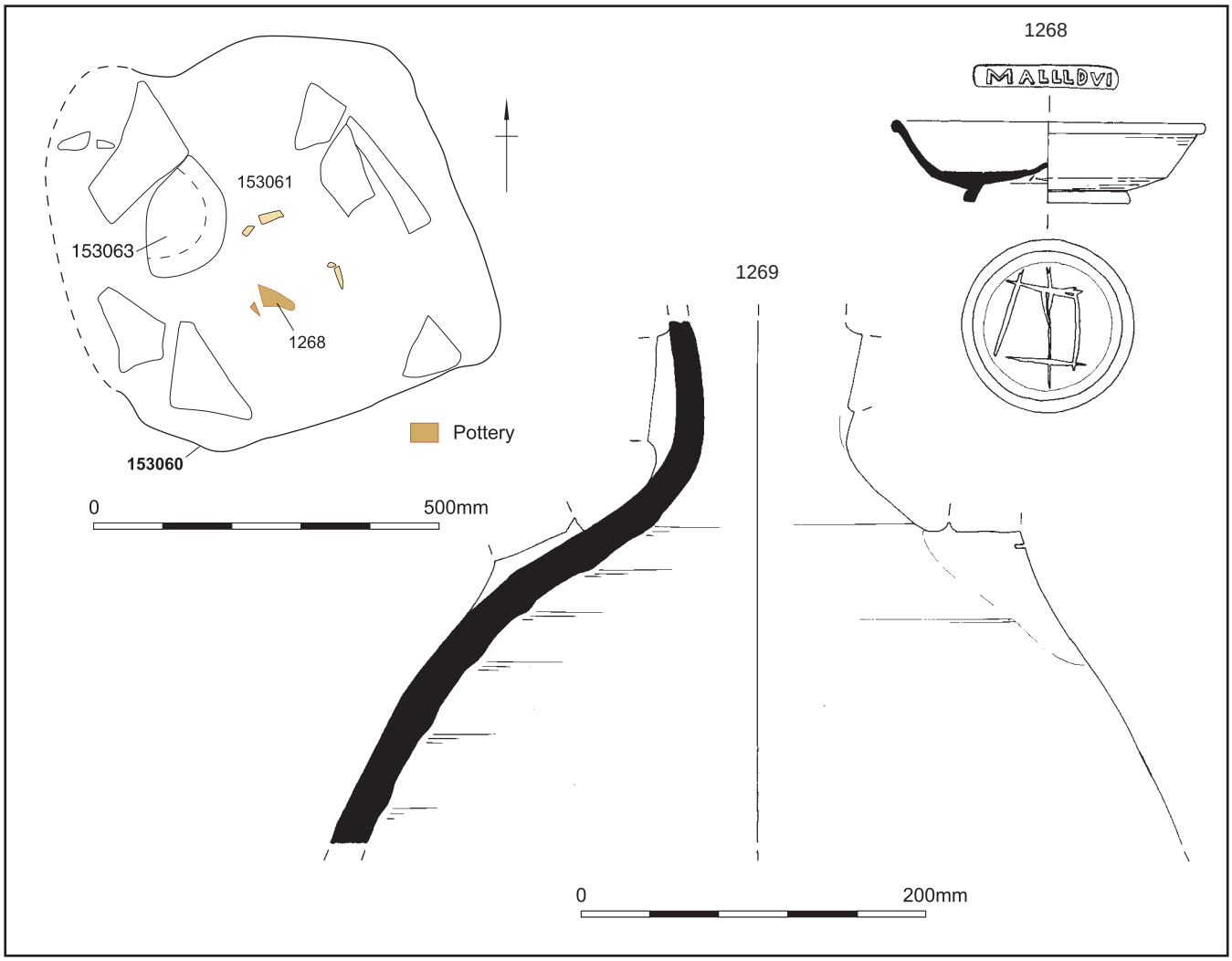


Fig 4.67 Plan of cremation grave 153060 (Zone 19)

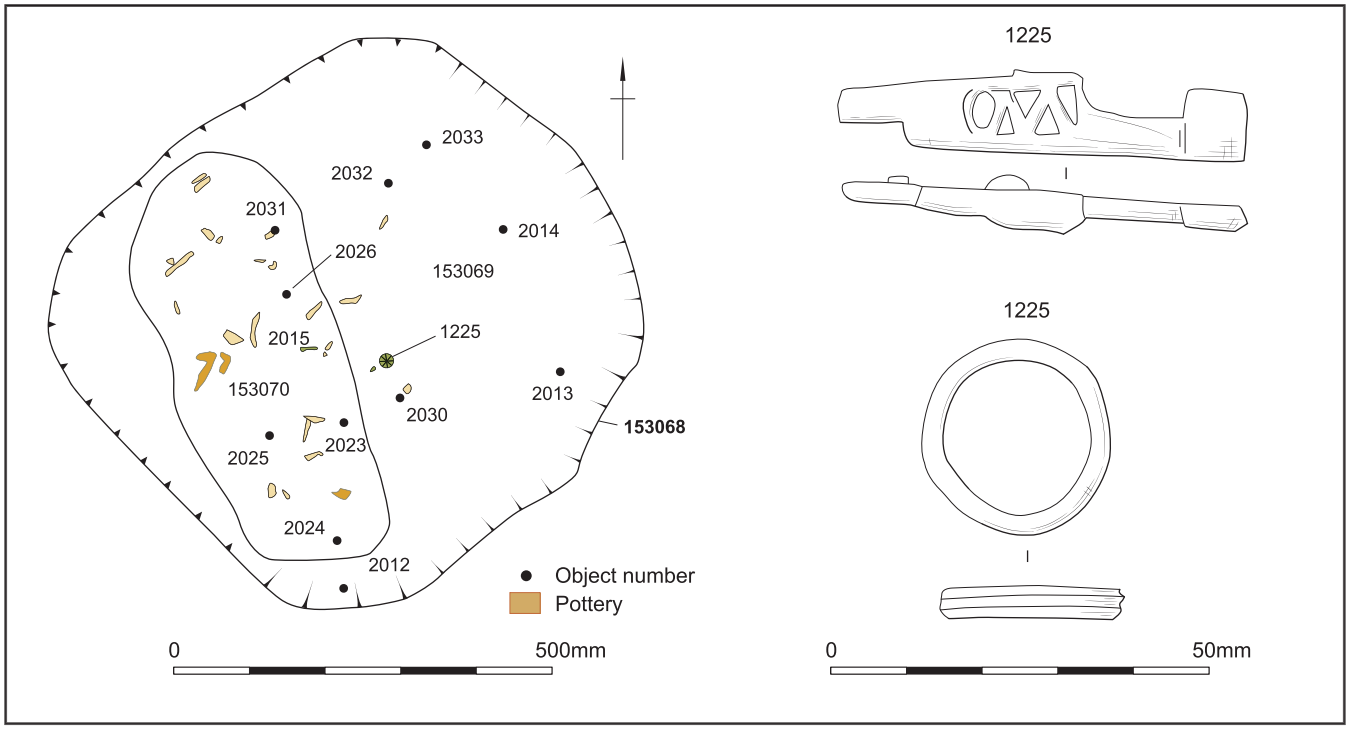


Fig 4.68 Plan of cremation grave 153068 (Zone 19)

2009, 225–228), AD 130–165. Scratched graffito on underside of base. Context 153063, placed inside amphora.
ON 1269: Dressel 20 amphora, upper body; rim missing and handles deliberately removed, AD 50–300 Context 153062. The vessel was inverted in the grave. Further body sherds in contexts 153061 and 153064.

Grave 153068 (Burial deposits 153069 and 153070)
Fig 4.68
Grave: Sub-square with steep straight sides, irregular base – 0.7 x 0.65m, 0.27m deep (base at 46.93m OD). Fill of mid-brown silt. Situated within enclosure 249029.
Human Remains: unurned 580.8g, adult >45 yr. ?Female.
Grave Goods:
ON 1225 Cu alloy, 1 ring (fitting) and lock bolt.
ON 2012–2015 and 2023 Nails, Fe.
ON 2024 Binding, Cu alloy, cut sheet fragment.
ON 2025, 2026, 2030 and 2031 Nails, Fe.
ON 2032 Fitting, Fe, junction comprising ring with 2 opposed junction plates. At least one of the junction plates has 2 rivets or nails.
ON 2033 Nail, Fe.
ON 4448 Nails x5, Fe. Type 1 nail, 4 small nails and 3 shank fragments.

Grave 166077 (Burial 166078)
Fig 4.69
Grave: Square with vertical straight sides, flat base – 0.5 x 0.5m, 0.35m deep (base at 46.89m OD). Fill of mid-brown silt, frequent small chalk inclusions.

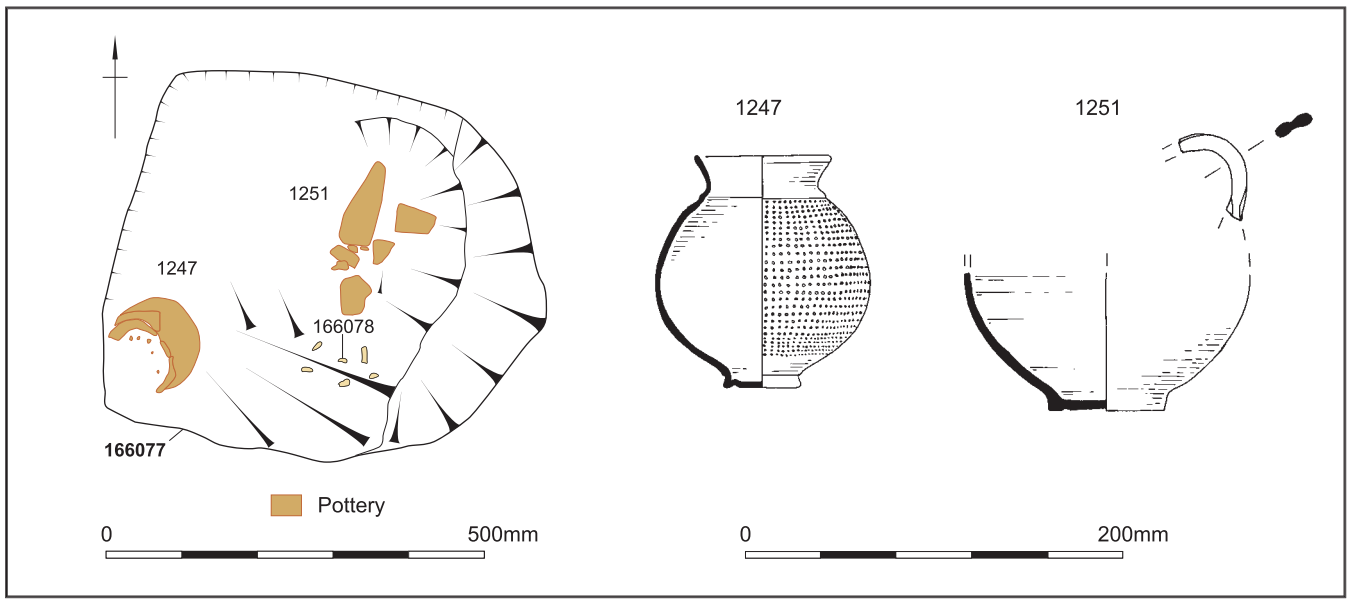


Fig 4.69 Plan of cremation grave 166077 (Zone 19)

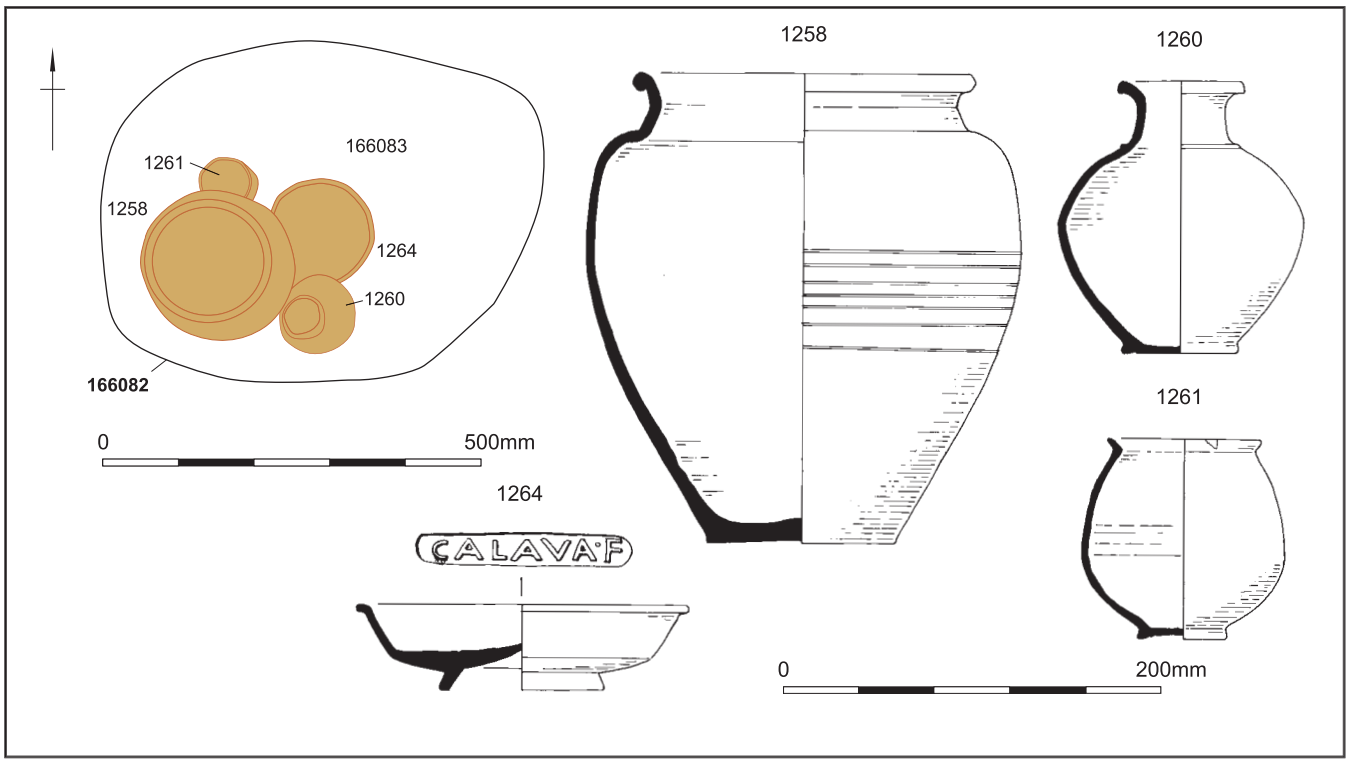


Fig 4.70 Plan of cremation grave 166082 (Zone 19)

Pl 4.14 Grave 166082 (Zone 19; view from north-east)

Human Remains: – ?cenotaph, 26.6g, ?subadult/adult *c* 15–35 yr.
ON 1247 Fine greyware poppyhead beaker (Monaghan 1987, type 2A4), AD 130–170. Capacity 480ml.
ON 1251 Oxidised ware single-handled, globular-bodied flagon, 2nd century AD.

Grave 166082 (Burial deposits 166083, 166084/8 and 166090)
Fig 4.70, Pl 4.14
Grave: Sub-circular with vertical straight sides, flat base – 0. 54 x 0.47m, 0.24m deep. Fill of mid-brown silt, chalk inclusions.
Human Remains: 166083 and 166084/8 – Urned burial, 1098.8g, adult *c* 40–55 yr.
166090 – accessory vessel ?token, 5.8g.
Grave Goods:
ON 1258 Greyware everted rim jar (Monaghan 1987, type 3H2), used as container for the cremated human remains, AD 150–250/300. Capacity 4 litres. Context 166084.
ON 1260 Greyware flask (Monaghan 1987, type 1B6), AD 150/180–230. Capacity 500ml. Context 166083.
ON 1261 Fine greyware globular beaker (Monaghan 1987 type 2H), AD 70/80–130. Capacity 500ml. Context 166086.
ON 1264 Central Gaulish samian form 18/31, stamped by Calava of Lezoux (Stamp cat no 14; Hartley and Dickinson 2008b, 162–164), AD 125–155. Shape slightly distorted, 174–180mm in diameter. Capacity 350ml. Context 166083.
Animal bone.

Grave 177480 (Burial 177482)
Fig 4.71
Grave: Sub-circular with moderate straight sides, flat base – 0.95m diameter, 0.45m deep (base at 46.05m OD). Fill of mid–dark brown silt, occasional flint, charcoal and chalk inclusions.

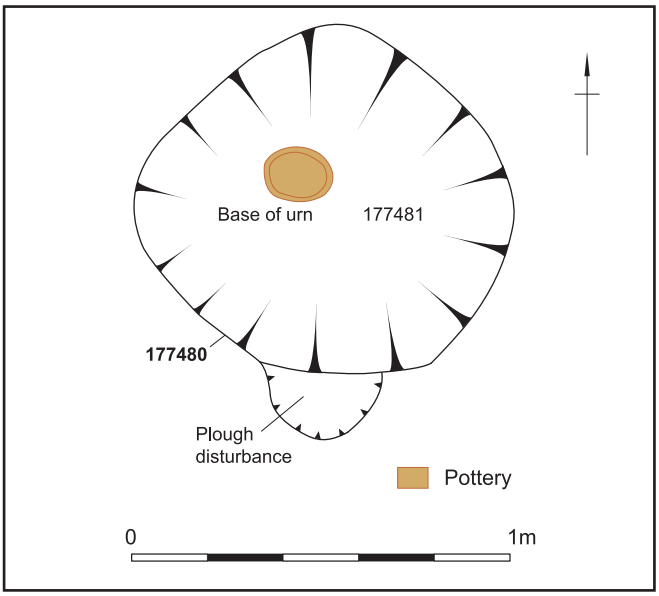


Fig 4.71 Plan of cremation grave 177480 (Zone 19)

Human Remains: (?urned) burial and ?redeposited material, 162.7g, adult >45 yr. ?Female.
Grave Goods:
Cremation urn? – body/base sherds only (not illustrated).
ON 4669 Nails, Fe, 23 nails, 26 hobnails and 6 indeterminate fragments.

Grave 193051 (Burial 220075)
Fig 4.72
Grave: *Grave*: No visible cut or identifiable grave fill.
Human Remains: ?cenotaph, 43.2g, adult >30–45 yr.
Grave Goods:
ON 2051 Grog-tempered ware (Patchgrove-type oxidised surfaces, grey core) pedestal jar base (Thompson 1982, type A8), ?used as container for the cremated human remains, late 1st century BC–1st century AD. Context 220074.

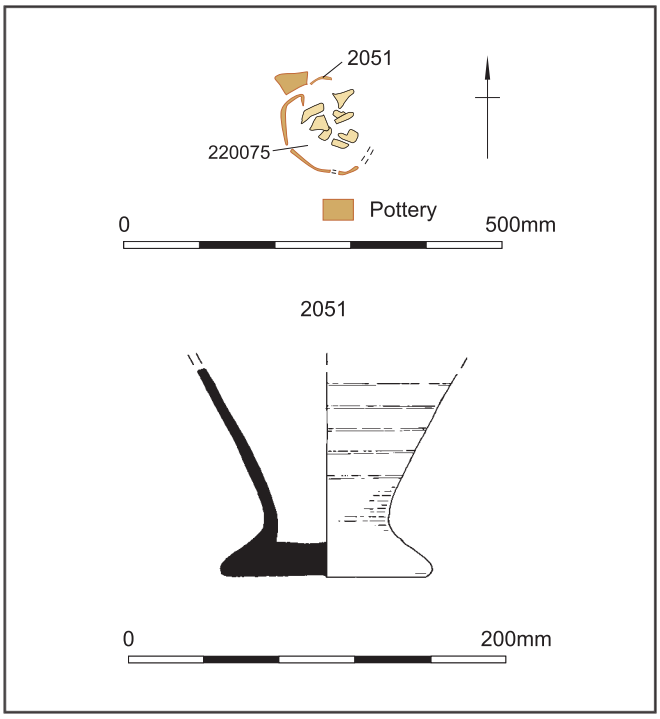


Fig 4.72 Plan of cremation grave 193051 (Zone 19)

Grave 220054 (Burial deposits 220055 and 220056)
Not illus
Grave: Redeposited in inhumation grave 220054 (see above).
Human Remains: redeposited, 2.9g, juvenile/subadult *c* 5–18 yr.

Grave 220057 (Burial 220058/220059)
Fig 4.73
Grave: Square with vertical straight sides, flat base – 0.84 x 0.84m, 0.54m deep (base at 46.61m OD). Fill of mid–dark brown sandy silt, frequent large chalk inclusions.
Human Remains: Unurned burial and redeposited, 1237.3g, adult, >45 yr. ?Female.
Grave Goods:
ON 1265 Complete pig skull.
ON 1266 and 1267 Brooch, large Colchester brooch, two pieces, bent and twisted. *c* AD 30–60.

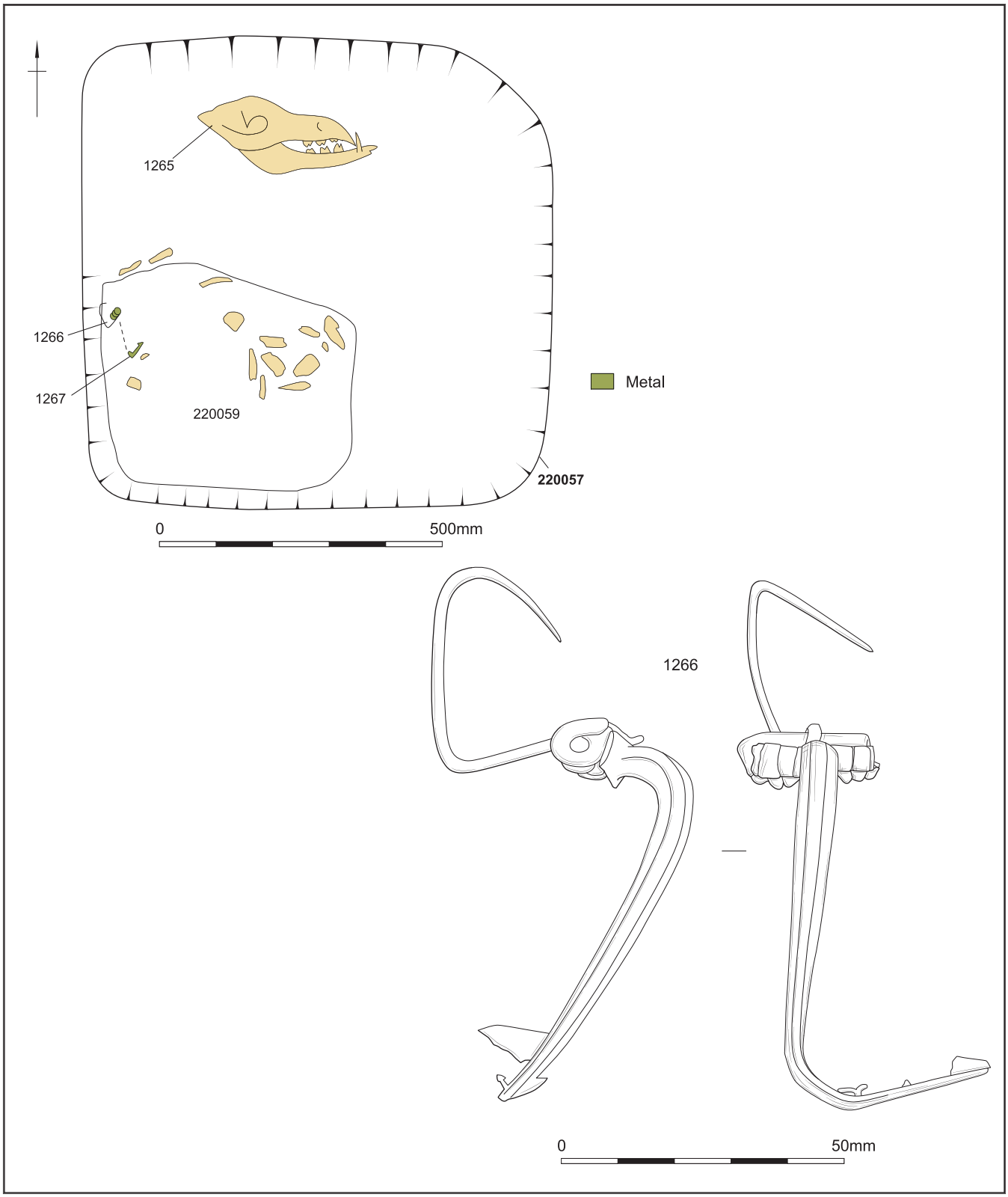


Fig 4.73 Plan of cremation grave 220057 (Zone 19)

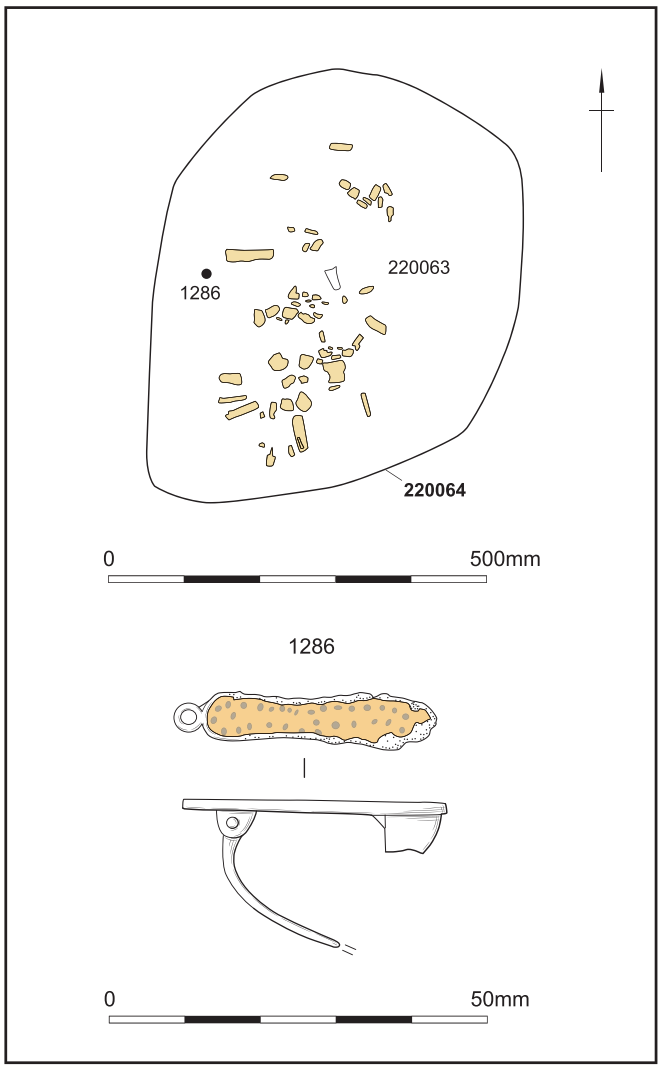


Fig 4.74 Plan of cremation grave 220064 (Zone 19)

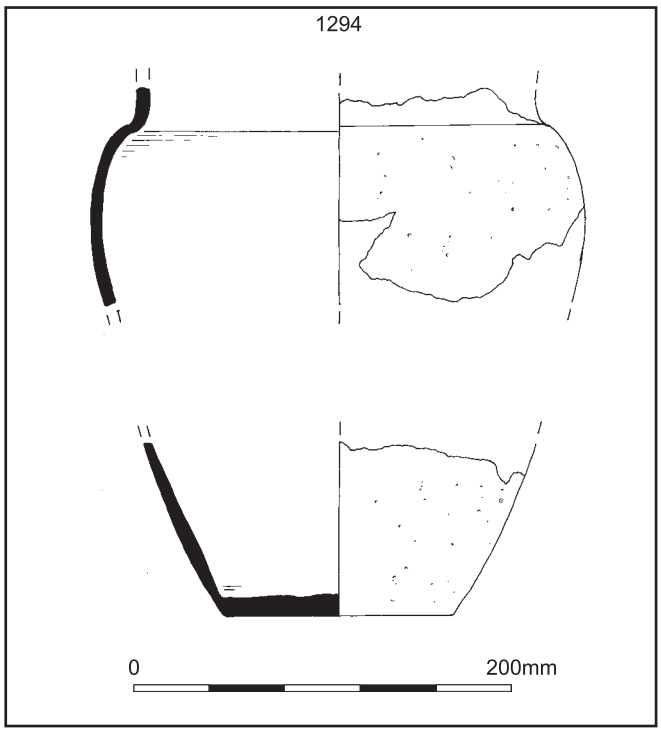


Fig 4.75 Pottery vessel from cremation grave 220068 (Zone 19)

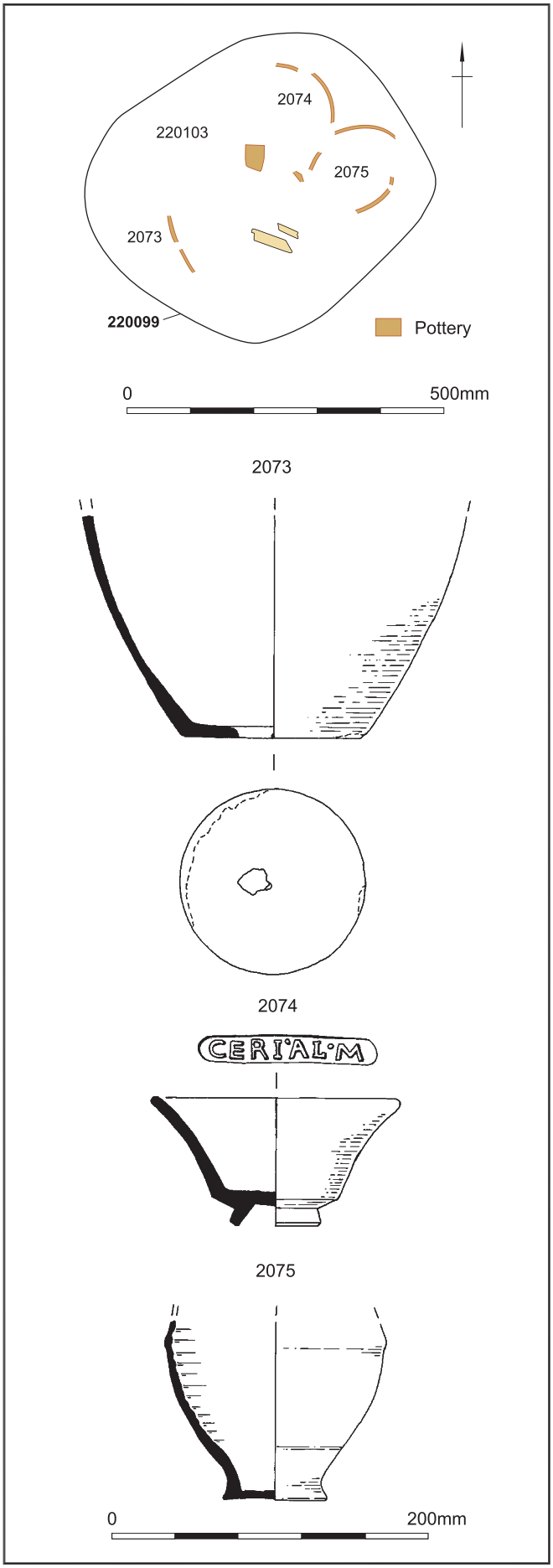


Fig 4.76 Plan of cremation grave 220099 (Zone 19)

Grave 220064 (Burial 220063)
Fig 4.74
Grave: Sub-rectangular with steep straight sides, concave base – 0.68 x 0.57m, 0.22m deep (base at 46.91m OD). Fill of mid-brown sandy silt, moderate chalk inclusions.
Human Remains: Unurned burial, 249.2g, adult >21–35 yr. ?Female.
ON 1286 Brooch. Shoe-shaped enamelled plate brooch.

'Grave' 220068 (Cenotaph deposit 220069/220070)
Fig 4.75
Feature: Sub-circular with steep sloping sides, 0.25m across, 0.13m deep. Fill of brown sandy silt with chalk nodule inclusions, base of pottery vessel fills almost entire cut.
Human Remains: ?cenotaph, 0.1g.
ON 1294: Grog-tempered ware necked jar (Thompson 1982, type B1–1), used as container for the cremated human remains, late 1st century BC–1st century AD. Context 220070.

Grave 220072 (Burial 220073)
Not illus
Grave: Sub-circular with moderate to steep straight sides, flat base – 0.57 x 0.47m, 0.1m deep (base at 46.99m OD). Fill of mid-brown sandy silt with chalk nodule inclusions.
Human Remains: Unurned burial, 70g, adult, *c* 20–40 yr.

Grave 220099 (Burials 220103/220104)
Fig 4.76
Grave: Sub-circular with shallow irregular sides, irregular base – 0.58 x 0.42m, 0.14m deep (base at 47.14m OD). Fill of mid-greyish brown silty loam with occasional chalk inclusions.
Human Remains: Urned burial, 436g, adult 20–35 yr. ?Male.
ON 2073: Grog-tempered ware jar base and lower body, used as container for the cremated human remains. Single large post-firing perforation through the base perhaps an indication of a change of use.
ON 2074: Central Gaulish samian form 33 cup. Stamped by Cerialis ii of Lezoux (Stamp cat no 15; Hartley and Dickinson 2008a, 350–353, die 4a), AD 135–165. Repaired in antiquity using birch bark tar-derived glue.
ON 2075: Fine greyware jar/beaker base, late 1st or 2nd century AD.

Grave 220115 (Burial 220116)
Not illus
Grave: Square with steep straight sides, flat base – 0.5 x 0.5m, 0.07m deep (base at 47.09m OD). Fill of mid-greyish brown sandy silt with occasional chalk inclusions.
Human Remains: ?Unurned burial, 78.7g, adult >20 yr.

Grave 220117 (Burial 220118)
Not illus
Grave: Circular cut with shallow irregular sides, concave base – 0.3m diameter, 0.07m deep (base at 46.7m OD). Fill of mid-greyish brown sandy silt with occasional chalk inclusions.
Human Remains: – Unurned burial, 231.7g, adult >30 yr.?Female

Grave 220119 (Burial 220121)
Fig 4.77
Grave: Sub-circular cut with irregular steep sides, concave base – 0.38m diameter, 0.17m deep. Fill of mid-greyish brown sandy silt with occasional chalk inclusions.
Human Remains: Urned burial, 356.5g adult *c* 30–45yr. ??Female.

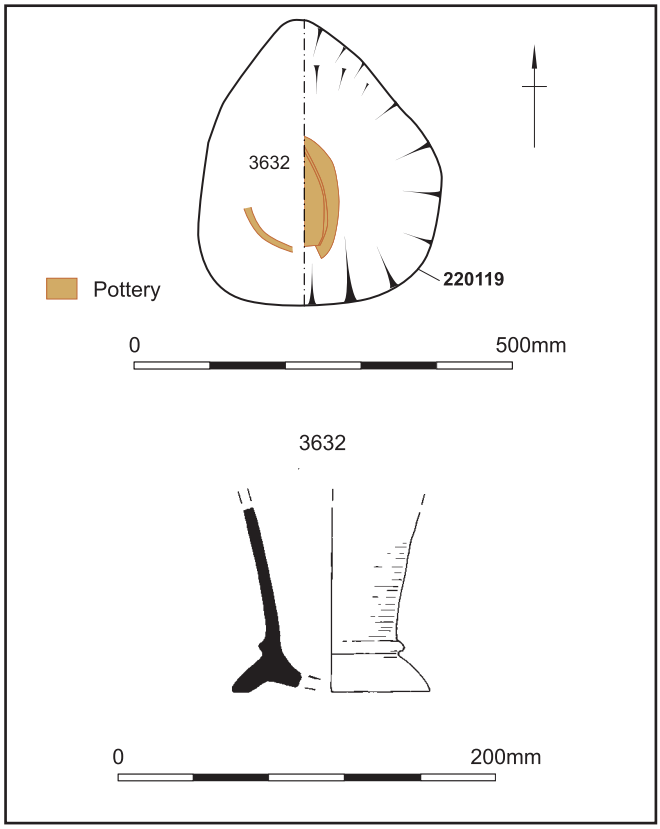


Fig 4.77 Plan of cremation grave 220119 (Zone 19)

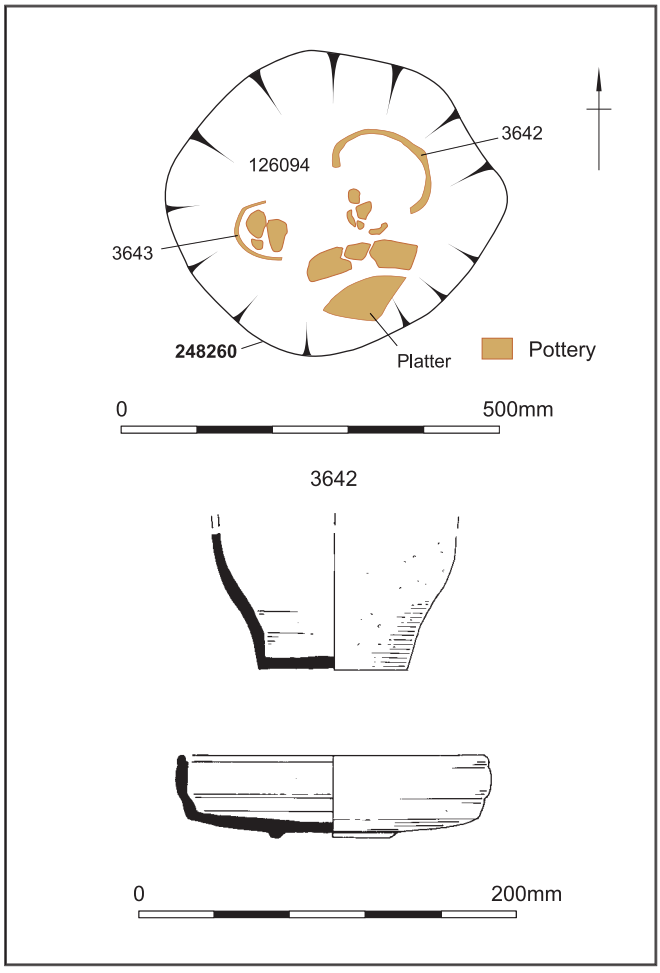


Fig 4.78 Plan of cremation grave 248260 (Zone 19)

ON 3632: Grog-tempered ware pedestal jar base, used as container for the cremated human remains, late 1st century BC–1st century AD. Context 220120–220122.

Grave 220129 (Burial 220130)
Not illus
Grave: Sub-circular cut with moderate irregular sides, concave base – 0.8 x 0.8m, 0.22m deep (base at 46.98m OD). Fill of mid-brown sandy silt with common chalk inclusions.
Human Remains: 271.9g adult, >35 yr. ??Male.
Grave Goods:
ON 4698 Nail, Fe, 2 fragments.

Grave 248260 (Burial deposits 248261/248263)
Fig 4.78
Grave: Sub-circular, moderate concave sides, concave irregular base – 0.45 x 0.4m, 0.1m deep (base at 46.4m OD). Fill of grey brown sandy clay loam with some chalk inclusions.

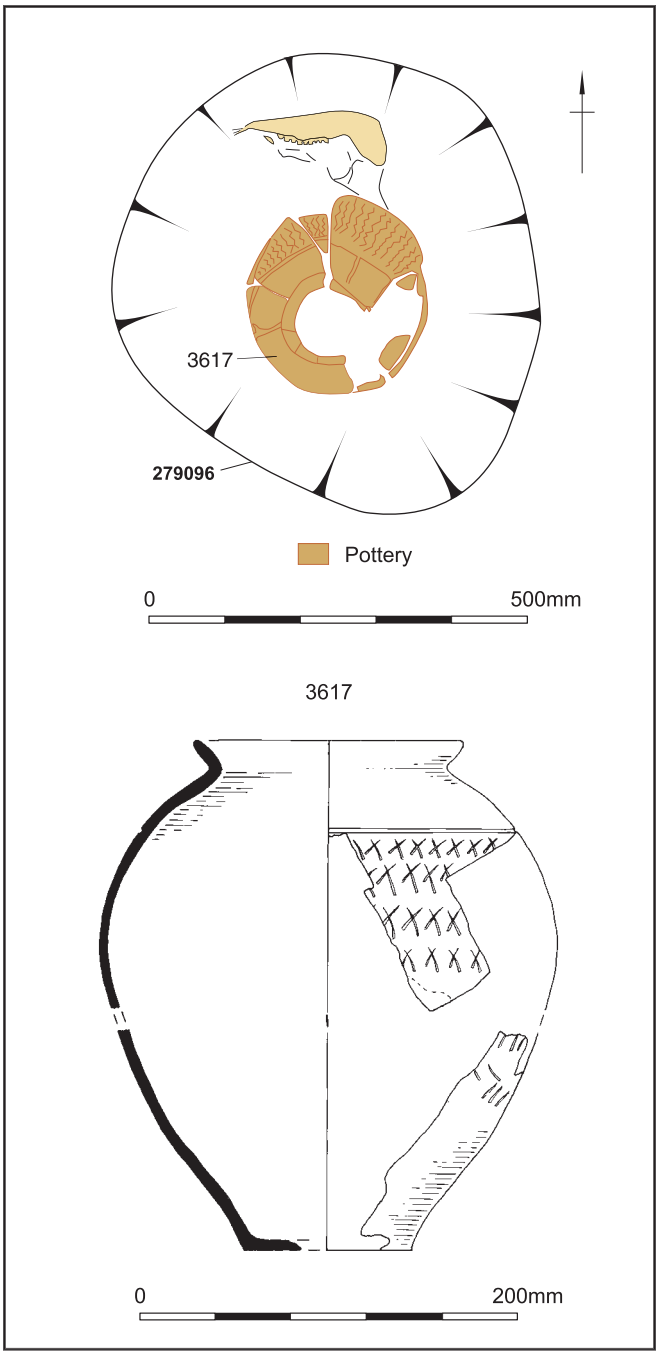


Fig 4.79 Plan of cremation grave 279096 (Zone 19)

Human Remains: Urned burial, 125.8g adult, *c* 18–40 yr.
Grave Goods:
ON 3642: Grog-tempered ware jar or butt beaker (Thompson 1982, type G5) base, used as container for the cremated human remains, mid-/late 1st century AD.
ON 3643: Sandy ware flat base sherds from a small jar or beaker, very fragmentary, mid-1st century AD. Context 248265 (not illustrated).
Grog-tempered ware platter (Thompson 1982 type G1–6), mid–late 1st century AD.

Grave 279096 (Burial 279098)
Fig 4.79
Grave: Sub-circular with steep concave sides, concave base – 0.61 x 0.57m, 0.29m deep (base at 46.25m OD). Fill of light greyish brown silty clay loam with common chalk and occasional flint inclusions.
Human Remains: Urned burial, 404.7g, adult >50 yr. ??Female.
Grave Goods:
ON 3617: Grog-tempered ware flared rim jar, used as container for the cremated human remains, 2nd–early 3rd century AD. One side of vessel extensively repaired with birch bark tar-derived glue prior to deposition.
Cattle jaw, unburnt.

As described above, the main Roman mixed-rite cemetery lay to the north-west of the boundary defined by trackways 126277 and 193119 (Fig 4.51), the northern limit of the burials appearing to be defined by ditch 126170, which was at least 50m long and extended beyond the limit of excavation to the north. To the west it had been truncated by Anglo-Saxon/medieval trackway 126227, beyond which it continued as 126191 and terminated at trackway 126226, suggesting that the two were contemporary. Ditch 126170 was aligned east–west, followed a slightly sinuous course, was 1–1.5m wide and up to 0.7m deep, and had moderately sloping sides and a concave base; the naturally derived silty fill contained a small amount of pottery of early Roman date.

Ditches 126172 (which cut ditch 126170) and 151055 (see Fig 4.93) represent a further probable boundary, apparently re-established in the Anglo-Saxon period by the alignment of trackway 126227, and in the Roman period they may also have related to a trackway, one that was a precursor to 126227 and converged with or continued trackway 126226.

Trackway 126226 was on a NW–SE alignment and extended beyond the northern limit of excavation. The south-western extent of the trackway was cut by Anglo-Saxon trackway 126227 and, as noted above, trackway 126226 may represent an earlier phase of this routeway, which was on a different alignment in the north, but the same in the south. The trackway was 3.4m wide and 0.3m deep. It was not metalled and the feature is more likely to have formed by continued use over an extended period, forming a hollow-way, rather than by deliberate construction. However, the pottery recovered from the fill is exclusively of Late Iron Age–early Roman date.

Enclosure 249029, probably square or rectangular in plan, was situated at the northern edge of the zone and continued beyond the limit of excavation (Fig 4.53). The

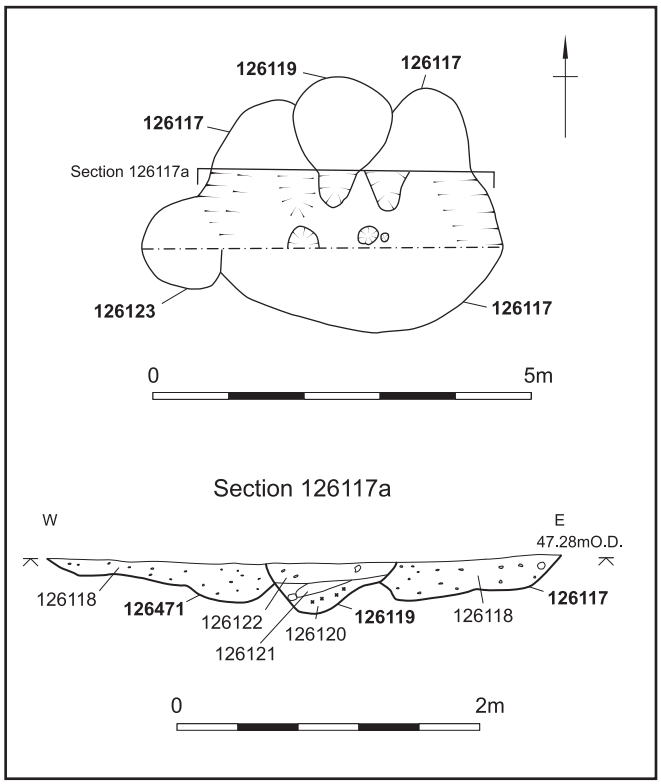


Fig 4.80 Plan and section of Roman sunken-featured building 126117 (Zone 19)

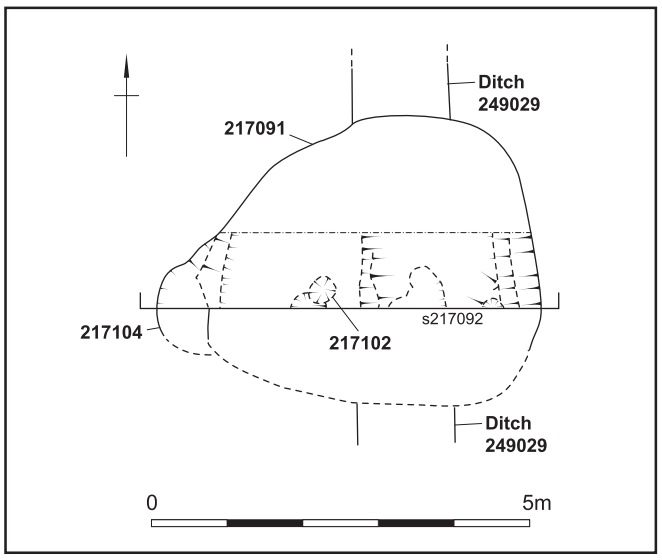


Fig 4.81 Plan of Roman sunken-featured building 217091 (Zone 19)

enclosure measured 11m by at least 11m internally, and the ditch, which was up to 2m wide and 0.8m deep, had steep straight sides and a flat base. A northern ditch terminal on the west side may mark the location of an entrance. This terminal cut ditch 126170 but appeared to respect later ditch 126172. The ditch contained artefacts typical of domestic rubbish including pottery, animal bone, shell and fired clay, the pottery indicating an early Roman date. Cremation burial 153068 (Fig 4.68), the only burial found within the enclosure, may have been earlier, perhaps contemporary with ditch 126170, whilst the enclosure could have been associated with later ditch 126172. However, the possibility remains that enclosure 249029 did form part of the funerary complex and it seems certain to have been in existence when burials were being made in the immediate vicinity.

Within the enclosure, and perhaps contemporary with it, was a possible sunken-featured building (126117) measuring 3.85m east–west by 3.25m north–south, and 0.26m deep. It was filled with material relatively rich in charcoal and containing pottery and some animal bone (Fig 4.80). The pottery dates the infilling of the feature to the early Roman period. Hearth or oven 126175, with a possible flue at the southern end, measured 1.45m in length, 0.88m in width and 0.35m deep. It was filled with large amounts of charcoal, some fired clay, and a notable concentration of pottery which securely dated this feature, like the possible sunken-featured building, to the early Roman period. South-west of the hearth, a possible posthole measuring 0.45m in diameter and 0.2m deep containing early Roman pottery may have been related to a superstructure associated with the building. The fill of the sunken-featured building was cut by two pits (126119 and 126123); no finds came from pit 126123 but pottery from 126119 dates it to the middle Roman period.

Another possible sunken-featured building (217091) was situated 5m west of 126117 and cut enclosure ditch 249029. Sunken-featured building 217091 measured 4.07m by 3.5m, was 0.57m deep and had moderately sloping sides and a flat to concave base (Figs 4.81 and 4.82). Three internal postholes (217100, 217102 and 217094) were probably related to the superstructure. The fill of the structure contained a small amount of fired clay and a single sherd of early Roman pottery.

An isolated pit (279078, not illustrated), approximately 150m to the west of enclosure 249029, contained a sherd of middle Roman date.

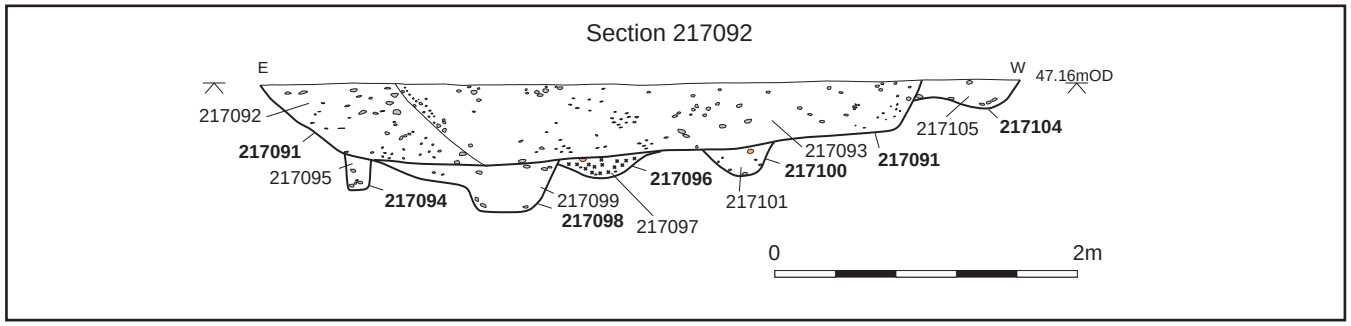
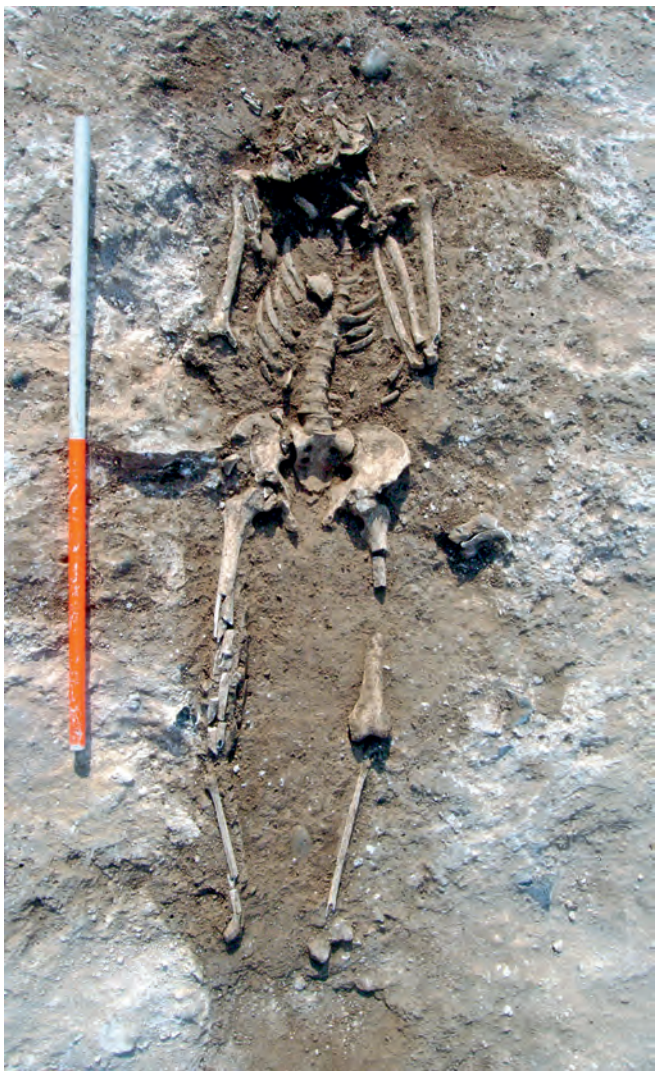


Fig 4.82 Section of Roman sunken-featured building 217091 (Zone 19)



Pl 4.15 Roman burial 262062 in ditch 151055 (Zone 19; view from south)

Ditches 126172 at the east end of Zone 19 (see above) and 151055 (see Fig 4.93) to the west are likely are to have been part of an early Roman field system, and were traced over a distance of more than 400m before 150155 turned to the south-west and continued beyond the excavation area; here it was cut by several Anglo-Saxon burials (see Chap 5). The ditches measured up to a maximum of approximately 1m in width and 0.3m in depth; ditch 126172 was shallower at its north-eastern extent, probably a consequence of greater truncation further up-slope. The sides of both were moderately sloping and the base concave. Ditches 126172 and 151055 contained no pottery later than early Roman, and a considerable proportion was Late Iron Age (or earlier). Ditch 205085, on a perpendicular alignment to the north of ditch 126172, measured 0.5m in width and 0.2m in depth, although it too is likely to have been affected by truncation. It appears to have been part of the same system of land division, but the pottery could only be assigned a broad Roman date. Further west, a short length of ditch extending south from 151055 was recorded, extending southwards beyond the limit of excavation.

An isolated burial (262062) lay at about the midpoint of ditch 150155 (Fig 4.93), and was aligned east–west following the axis of the ditch (Pl 4.15). No grave cut could be discerned and the burial was found about half way down the fill of the ditch. Burial 262062 was laid supine, and there was no evidence that it had been thrown into the ditch or otherwise unceremoniously disposed of.

However, there were no associated finds and it is of some interest in terms of its place of burial, in a ditch 100m to the west of the nearest known Roman burials (see below), and also because this adult male (*c* 35–45 yrs) had weapon injuries to the skull (see Vol 2, Chap 13).

Grave catalogue
Burial 262062
Not illus, Pl 4.15
Grave: No grave cut visible, within fill of E–W ditch 151055.
Human Remains: Burial supine and extended, *c* 65% skeletal recovery, adult *c* 35–45 yr. male. Trauma – sharp and pointed weapon injuries (skull).

Western Cemetery 195118
Another cemetery, the western cemetery, lay within Zone 19, approximately 150m west of the main cemetery (126189) (Figs 4.51 and 4.83). This second, small group (195118) comprised nine inhumation burials all aligned approximately north–south and lying north of trackway 193119. A further possible grave (262065) was situated approximately 40m to the east, cut through trackway 193119, and may have been an outlier of this cemetery but contained no human remains. All the inhumations, which include supine, flexed and crouched examples, were made within sub-rectangular or oval grave cuts. The graves were shallow, varying from 0.06m to 0.4m in depth and had probably been truncated by ploughing. Some burials were accompanied by grave goods, most notably copper alloy rings and a little collar (in graves 216010 and 262044) and a pin (grave 257016, ON 2433, see Figs 4.87, 4.89, 4.91).

At least one grave (216010) appears to have been spatially associated with a curving linear ditch (278061), 0.2m wide and less than 0.1m deep, which may have been part of an enclosure surrounding the burial, although it remains uncertain if the two were contemporary as the ditch contained no dating evidence. If projected to the west, beyond where it had been truncated, feature 278061 would also have enclosed grave 151051. An east-west aligned ditch (262041) cut away the northern end of graves 257027 and 257016, whilst graves 228050, 262044 and 278060 appeared to clip the northern edge of trackway 193119.

Grave catalogue
Grave 151051 (Burial 151050)
Fig 4.84
Grave: NNW–SSE, oval with very shallow sides, slightly concave base – 1.15 x 0.65m, 0.06m deep (base at 46.6m OD). Fill of orange brown silty clay loam with some chalk inclusions.

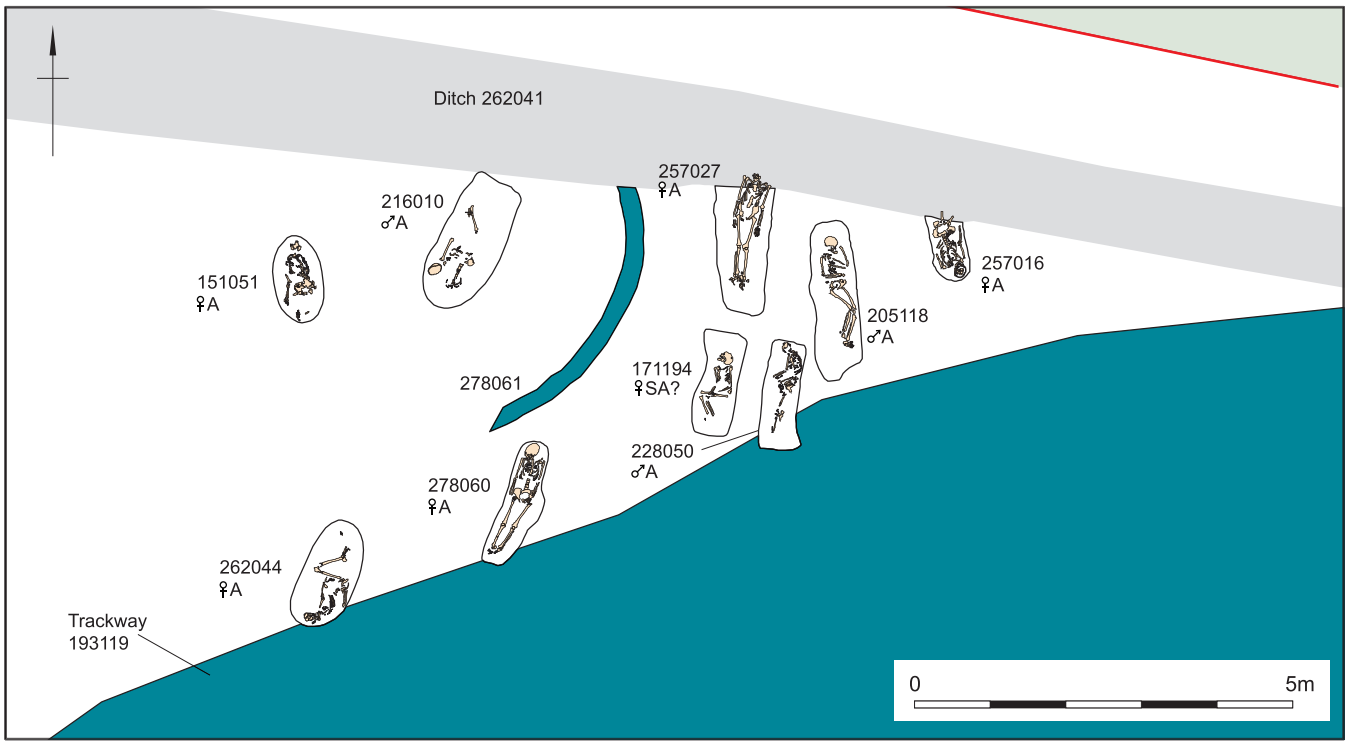


Fig 4.83 Plan of Roman western cemetery 195118 (Zone 19)

Human Remains: Burial semi-crouched, probable gap 0.1m between head and NNW end of grave, *c* 25% skeletal recovery, adult *c* 35–45 yr. ?Female.

Grave 171194 (Burial 171193)
Fig 4.85
Grave: NNE–SSW, sub-rectangular with moderate straight sides and a broadly flat base – 1.45 x 0.59m, 0.2m deep (base at 46.2m OD). Fill of light brown silt with chalk nodule inclusions.
Human Remains: Burial supine with legs flexed, pointing towards west, head facing west, probable gap 0.25m between head and NNE end of grave, *c* 75% skeletal recovery, subadult *c* 13–15 yr. ?Female.

Grave 205118 (Burial 205120)
Fig 4.86
Grave: NNW–SSE, sub-rectangular with steep straight sides, apart from SSE, which is stepped, flat base – 2.15 x 0.65m, 0.4m deep (base at 46.08m OD). Fill of dark brown sandy loam, moderate gravel inclusions.
Human Remains: Burial supine with legs slightly flexed, pointing east, head facing east, probable gap 0.2m between head and NNW end of grave, *c* 80% skeletal recovery, adult *c* 40–50 yr. Male.

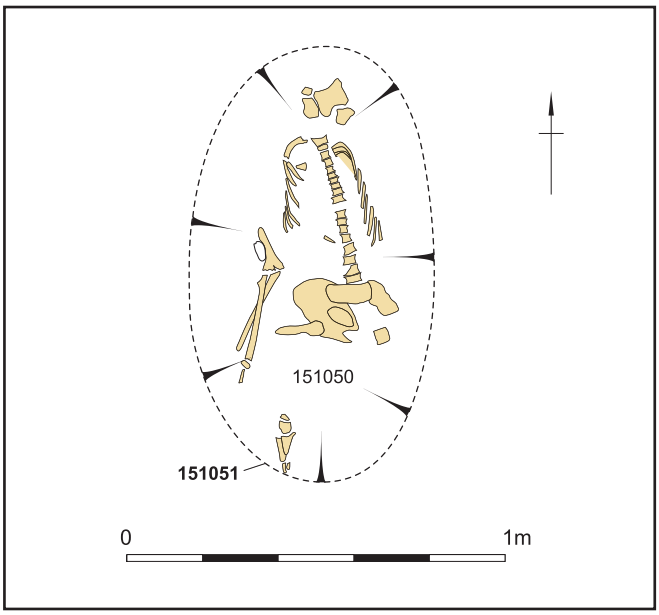


Fig 4.84 Plan of grave 151051 (Zone 19)

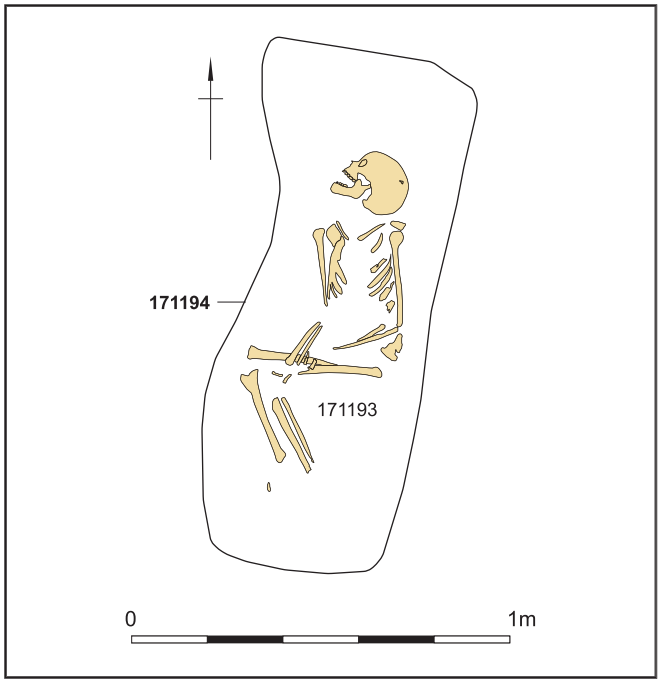


Fig 4.85 Plan of grave 171194 (Zone 19)

Grave 216010 (Burial 216011)
Fig 4.87
Grave: NNE–SSW, sub-rectangular with moderate straight sides, flat base – 1.85 x 0.8m, 0.34m deep (base at 46.3m OD). Fill of mid-brown sandy silt with chalk and gravel inclusions.

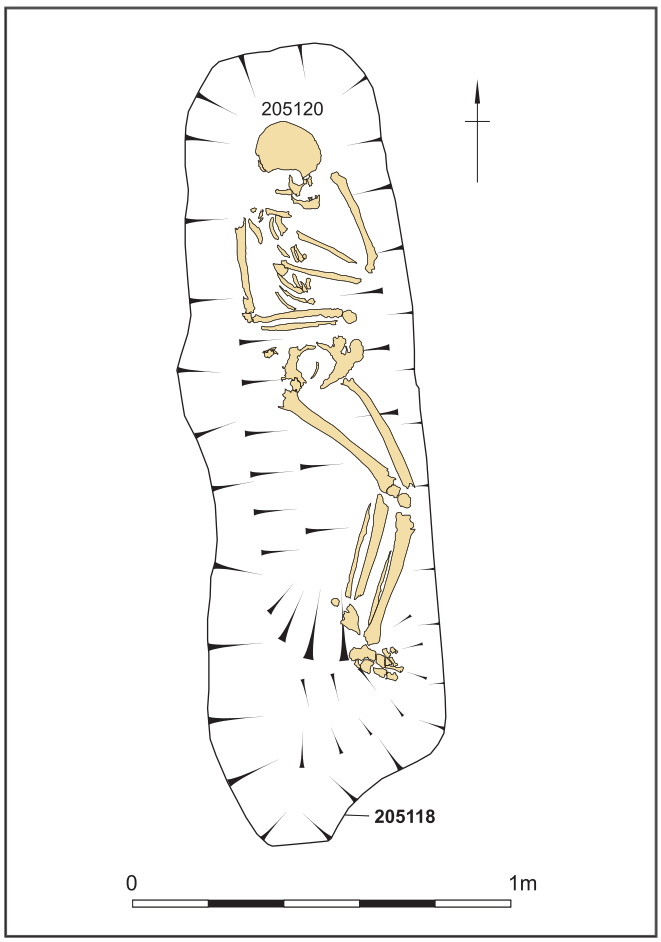


Fig 4.86 Plan of grave 205118 (Zone 19)

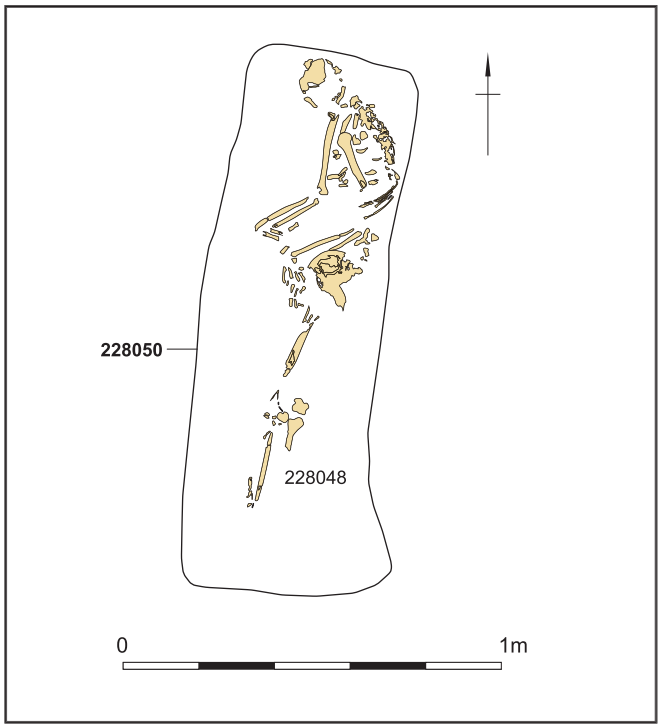


Fig 4.88 Plan of grave 228050 (Zone 19)

Human Remains: Burial supine, disturbed, skull, humerus and lower legs and feet disarticulated and redeposited at higher level, *c* 68% skeletal recovery, adult *c* 35–40 yr. Male.
Grave Goods:
ON 2427 Ring/collar, Cu alloy, 3 fragments, uncertain function.
ON 2428 Ring, Cu alloy.

Grave 228050 (Burial 228048)
Fig 4.88
Grave: NNE–SSW, sub-rectangular with moderate straight sides, concave base – 1.5 x 0.59m, 0.11m deep (base at 46.4m OD).

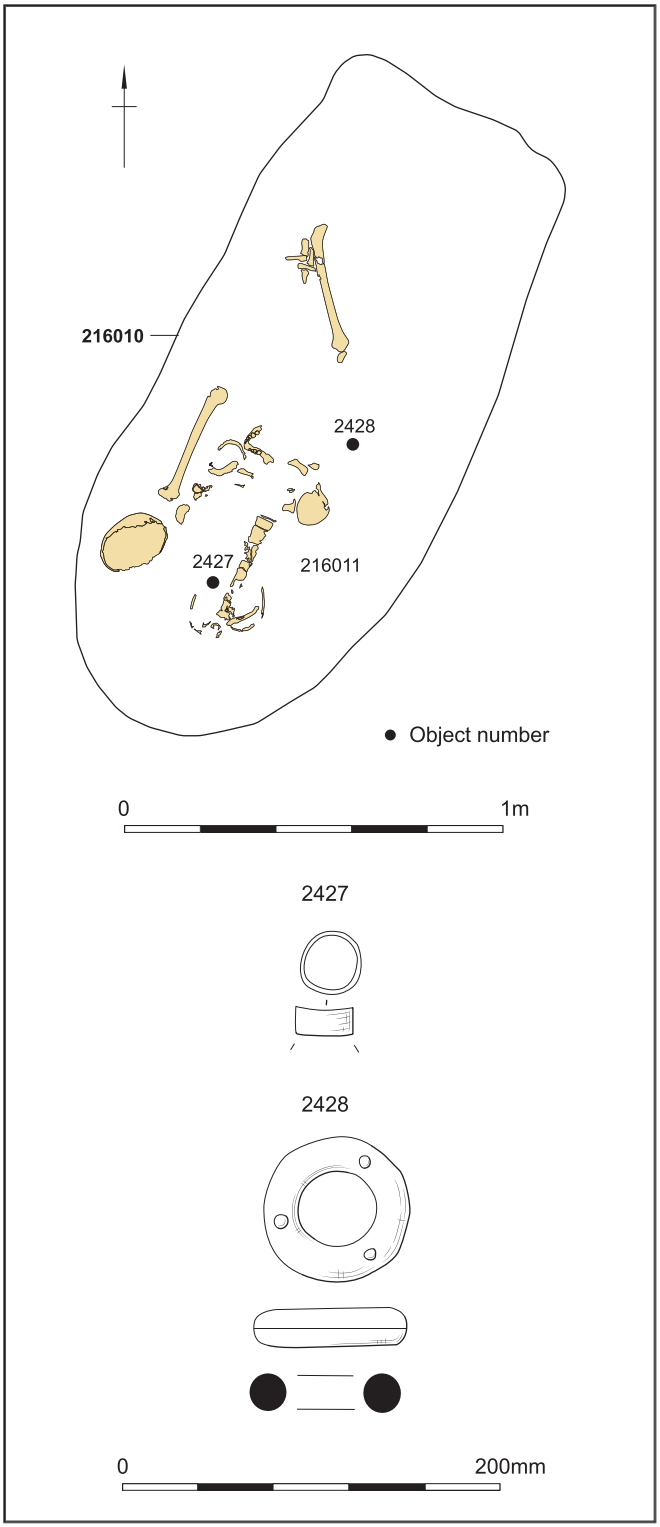


Fig 4.87 Plan of grave 216010 (Zone 19)

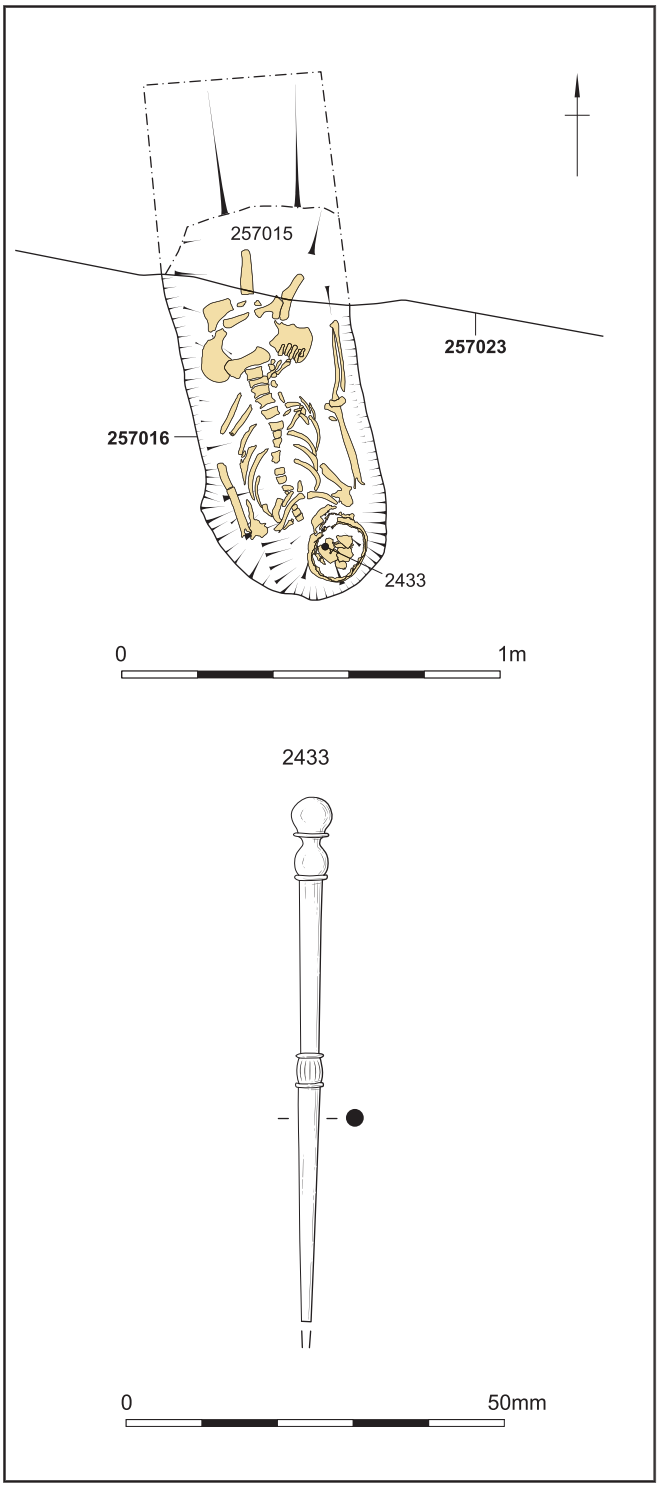


Fig 4.89 Plan of grave 257016 (Zone 19)

Fill of mid-brown silty clay with moderate chalk inclusions.
Human Remains: Burial on right side, head against NNE edge of cut, *c* 40% skeletal recovery, adult *c* 30–35 yr. Female.

Grave 257016 (Burial 257015)
Fig 4.89
Grave: NNW–SSE, sub-rectangular with steep straight sides, irregular base – 1.05 x 0.46m, 0.2m deep (base at 46.31m OD). Fill of light brown sandy silt, chalk and gravel inclusions.
Human Remains: Burial supine, legs truncated, head is against SSE edge of grave, *c* 60% skeletal recovery, adult *c* 30–40 yr. Female.

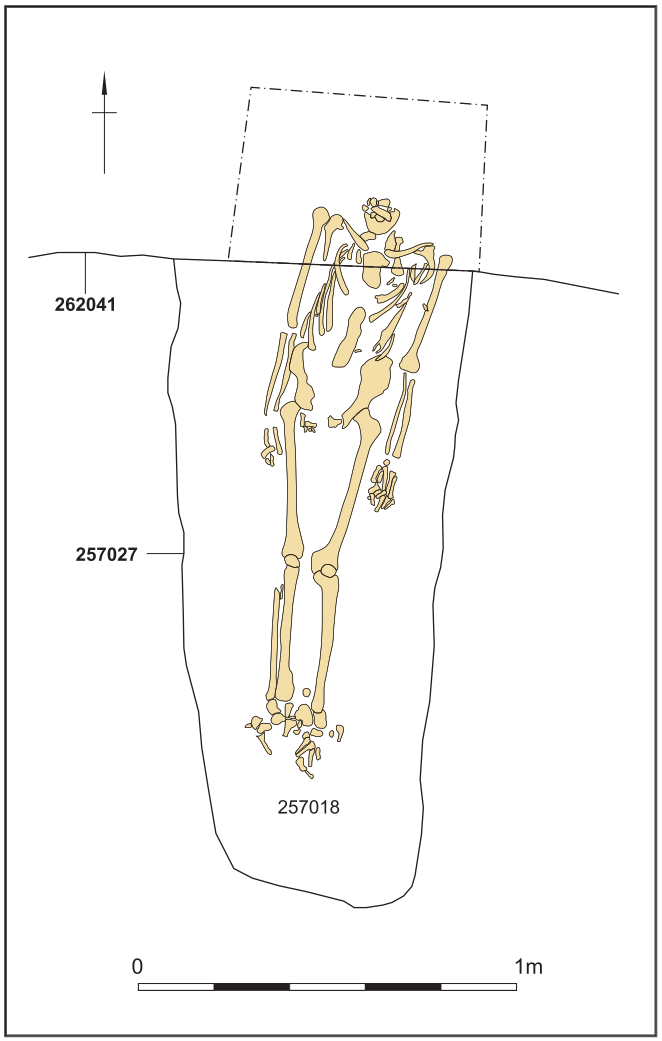


Fig 4.90 Plan of grave 257027 (Zone 19)

Grave Goods:
ON 2423 Pin, Cu alloy, hairpin in two pieces.

Grave 257027 (Burial 257018)
Fig 4.90
Grave: N–S, sub-rectangular with steep straight sides, flat base – 1.9 x 0.75m, 0.32m deep (base at 46.28m OD). Northern end truncated. Fill of light grey brown mottled fine sandy silt, chalk inclusions.
Human Remains: Burial supine and extended, *c* 70% skeletal recovery, adult *c* 35–45 yr. Male.

Grave 262044 (Burial 262043)
Fig 4.91
Grave: N–S, oval with shallow concave sides, concave base – 1.48 x 0.73m, 0.09m deep (base at 46.34m OD). Fill of dark brown clay silt.
Human Remains: Burial crouched and laid on left side, probable gap 0.1m between head and SW end of grave, *c* 50% skeletal recovery, adult *c* 30–40 yr. Female.
Grave Goods:
ON 1810 Ring, Cu alloy, small finger-ring, simple wire construction.

Grave 278060 (Burial 278058)
Fig 4.92
Grave: NE–SW, sub-rectangular with moderate to steep straight sides, base slopes to east – 1.74 x 0.5m, 0.2m deep

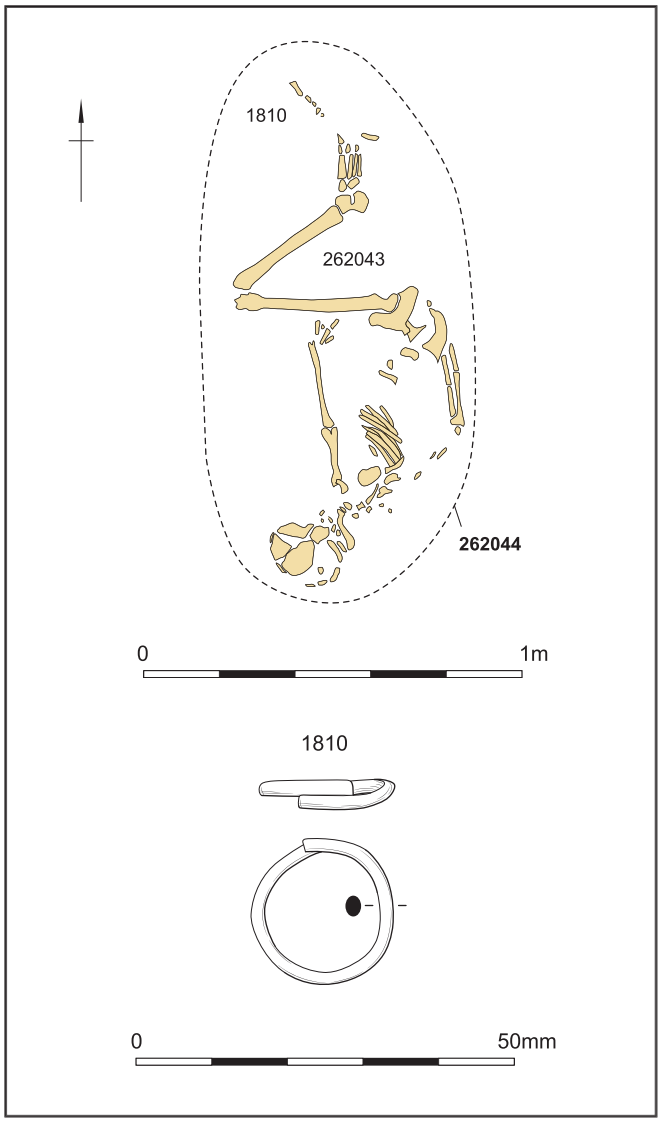


Fig 4.91 Plan of grave 262044 (Zone 19)

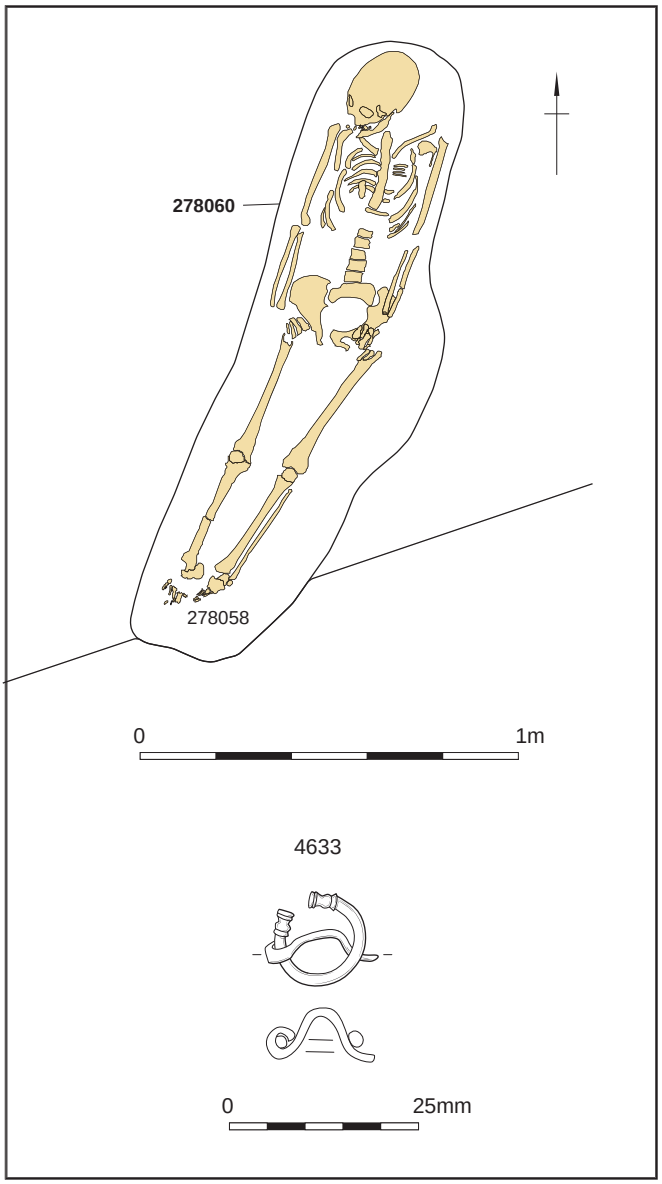


Fig 4.92 Plan of grave 278060 (Zone 19)

(base at 46.28m OD). Fill of light brown clay silt, moderate chalk and gravel inclusions.
Human Remains: Burial supine and extended, head is against NW edge of grave, *c* 90% skeletal recovery, adult *c* 20–23 yr. Female.
Grave Goods:
ON 4633 Brooch, Cu alloy, very small penannular brooch (not located in plan).

Zone 20

Roman

The field system relating to ditches 126172 and 151055 in Zone 19 extended into Zone 20, with ditches 267049 and 267054 extending to the north and south of east–west ditch 252001 (Figs 4.93 and 4.98). As was the case to the east, the east–west ditch approximately followed the crest of the slope, where the ground on the chalk ridge fell away to the south. The interpretation of north–south feature 253003/288027 is uncertain. Unfortunately the junction of this feature and ditch 151055 to the east lay just outside the excavated area, and later trackway 126227 had destroyed its relationship with ditch 252001 to the west. The southern part of the feature (280027) comprised a cobbled trackway some 2m wide, but to the north there was a narrower, shallower ditch (253003) which was probably a truncated continuation of this trackway. Approximately 250m to the west ditch 252001 petered out, truncated by ploughing, but 250m west again its possible continuation, as ditch 249033, formed a T junction with north-south ditches 267054 and 267049, the junction cut by a pit, 267047, which appears to have been deliberately located here (Fig 4.98). Pit 267047 contained a small amount of pottery dated broadly to the Roman period, but no other material to suggest its function.

In the south-east corner of an area defined by ditch 252001 and an extension of this to the north was a small group of features including three graves and three further ditches or gullies. The gullies (217131, 252004 and 278049), although unphased, seem most likely to be of Roman date on the basis of their alignments, and a single pit (217067) contained Late Iron Age–early Roman pottery. Only one of the graves

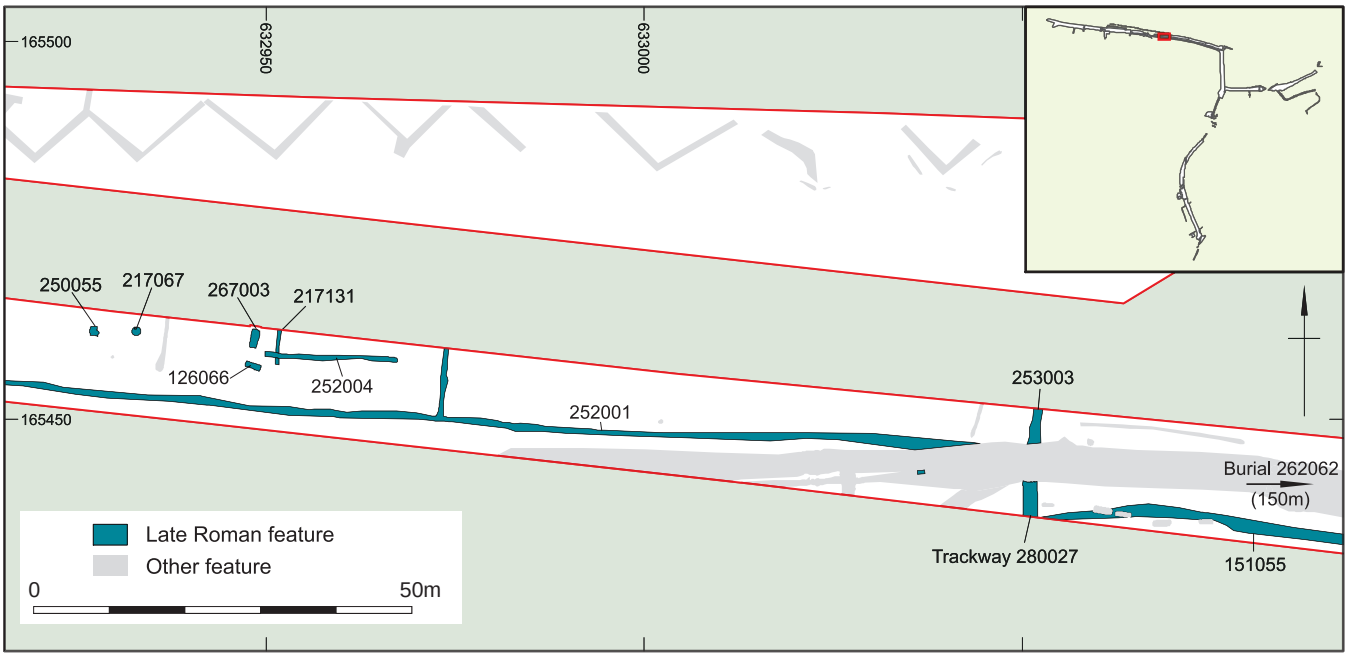


Fig 4.93 Plan of Roman features in eastern part of Zone 20

(267003), aligned north–south, could be dated with any certainty, containing Roman pottery in the backfill. Also present were several hobnails and numerous nails and other iron coffin fittings, which would also support a Roman date for the burial. Similarly, grave 126066 also contained hobnails and several nails likely to be from a coffin, and this also is very likely to belong to the same period. The most westerly grave, 250055, contained a poorly-preserved crouched inhumation burial, with no finds either associated with this or from the backfill of the grave, and it is possible that this burial is of prehistoric date.

Grave catalogue

Grave 267003 (Burial 267001)

Fig 4.94

Grave: NNE–SSW, sub-rectangular with moderate to steep straight sides, irregular base – 2.52 x 1.05m, 0.42m deep (base at 46.99m OD). Fill of mid-brown silt with moderate chalk nodule inclusions.

Human Remains: Coffined burial, disturbed, position not known, although the right arm appeared to be articulated, *c* 65% skeletal recovery, adult 40–50 yr. Male.

Grave Goods:

ON 1913 Hobnail, Fe, 3 fragments.
ON 1914 Nail, Fe, flattish head.
ON 1915 Rod/shank, Fe, 12 x nail shafts, square sections, some bent.
ON 1916 Nail, Fe, square/sub-rectangular sectioned shaft.
ON 1917 Rod/shank, Fe, square sectioned shaft, slightly bent.
ON 1918 Unidentified, Fe, 2 fragments.
ON 1920 Rod/shank, Fe, square/rectangular shaft fragment.
ON 1921 Strip fragment, Fe, rectangular sectioned.
ON 1922 Nail, Fe, flat head.
ON 1923 Nail, Fe, in 2 fragments, square sectioned shaft, bent into a swan-necked shape.
ON 1924 Rod/shank, Fe, nail shaft fragment?
ON 1925 Rod/shank, Fe, shaft fragment.
ON 1926 Rod/shank, Fe, nail shaft fragment? square section.

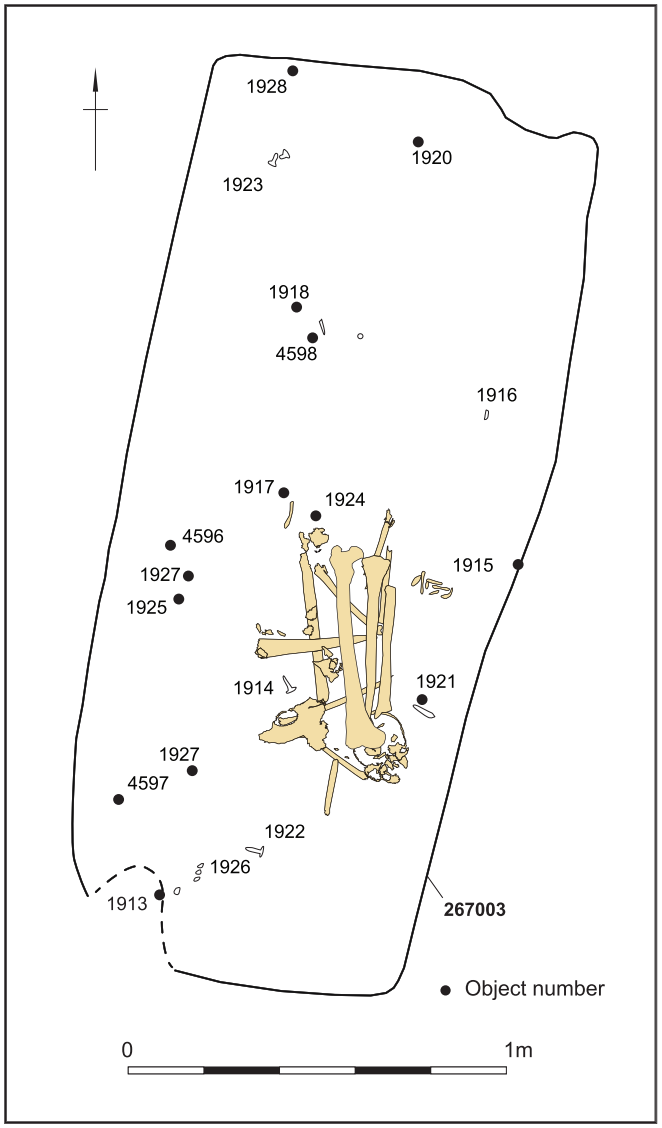


Fig 4.94 Plan of grave 267003 (Zone 20)

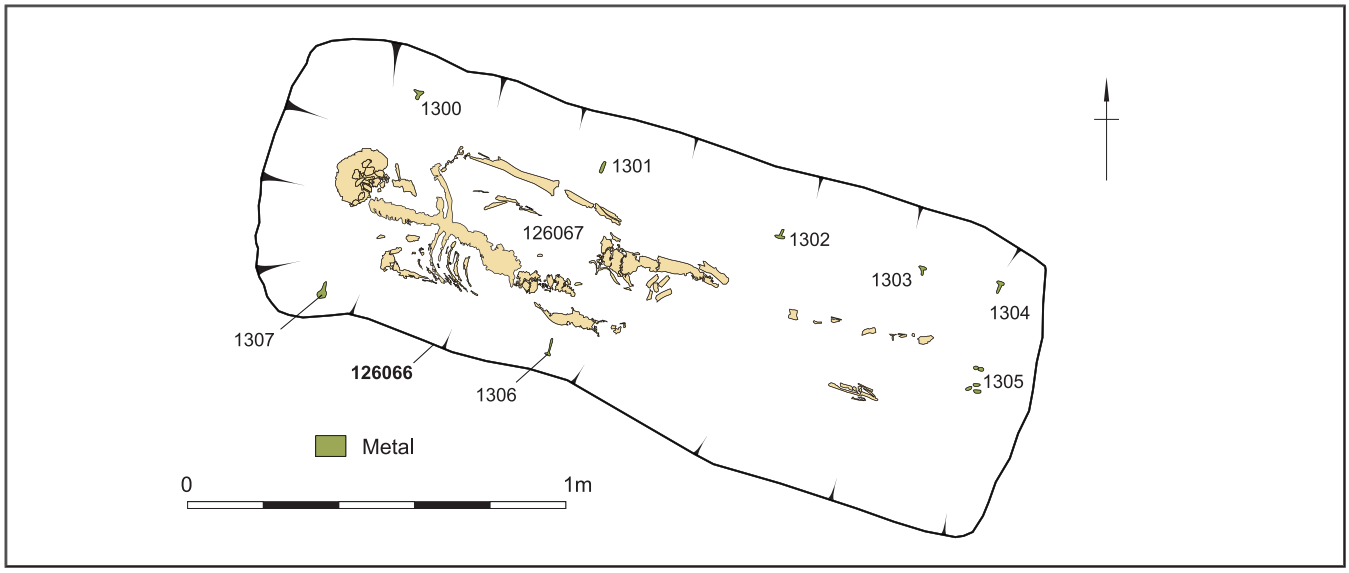


Fig 4.95 Plan of grave 126066 (Zone 20)

ON 1927 Nail, Fe, almost complete.
ON 1928 Rod/shank, Fe, shaft and part of head.
ON 4596 Rod/shank, Fe, 4 shanks.
ON 4597 Hobnail, Fe, 6 (and 3 from sample 6182).
ON 4598 Rod/shank, Fe, small fragment.

Grave 126066 (Burial 126067)
Fig 4.95
Grave: ESE–WNW, sub-rectangular with shallow sides, concave base – 2.22 x 0.77m, 0.1m deep (base at 47.17m OD). Fill of light brown silty clay with frequent gravel and chalk nodule inclusions.
Human Remains: Coffined burial, supine and extended, probable gap of *c* 0.1m between head and WNW end of grave, *c* 20% skeletal recovery, adult >45 yr. Male.
Grave Goods:
ON 1300 Nail, Fe, small nail, rectangular sectioned shaft, flat circular head.

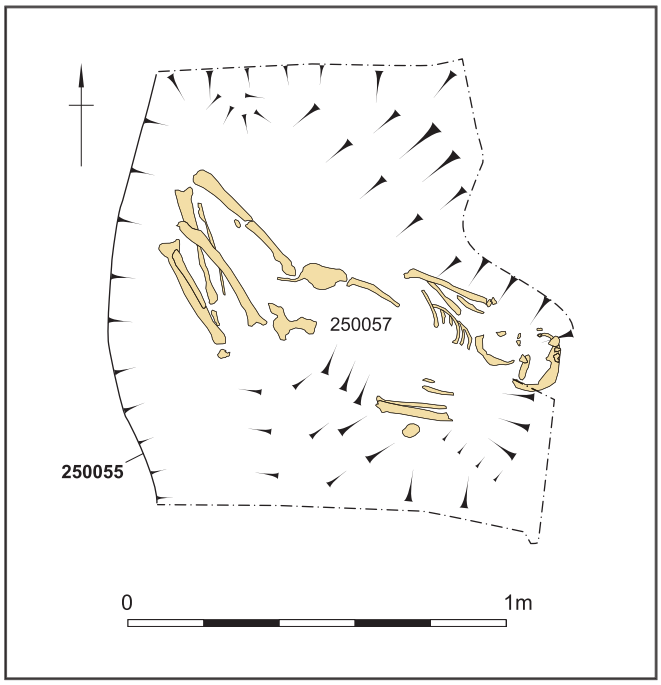


Fig 4.96 Plan of grave 250055 (Zone 20)

ON 1301 Nail, Fe, probable nail.
ON 1302 Nail, Fe, probable coffin nail, square sectioned shaft.
ON 1303 Rod/shank, Fe, probable nail, square sectioned.
ON 1304 Nail, Fe, probable coffin nail fragment.
ON 1305 Hobnail, Fe, 12 hobnails.
ON 1306 Nail, Fe, probable coffin nail.
ON 1307 Nail, Fe, probable coffin nail.

Grave 250055 (Burial 250057)
Fig 4.96
Grave: ESE–WNW, irregular cut with shallow irregular sides, irregular base – 1.2 x 1.1m, 0.22m deep (base at 47.24m OD). Fill of mid-brown silty sand with occasional gravel inclusions.
Human Remains: Burial crouched, legs point to north, *c* 55% skeletal recovery, adult *c* 25–35 yr. Female.

Short lengths of ditches probably relating to (and perhaps defining the western extent of) the field system extending from Zone 19 into Zone 20 were present further west in Zone 20, where Roman ditches on a slightly different NNE–SSW alignment were also revealed. Unfortunately, it is not known which alignment represents the earlier activity as no relevant stratigraphic relationships were revealed by the excavation and the pottery recovered was all of broad Roman date. However, the south-western corner of the eastern field system (represented here by ditch 249027) was possibly cut by an inhumation burial (128084) of middle Roman date (Fig 4.98). The relationship between the two features was not certain, but if correctly understood it would suggest that the ditch had infilled by the middle Roman period and that the ditches to the west may represent a new, NNE–SSW alignment. The contrast in alignments might, however, have been related to a change in alignment of trackway 249061 (see below) in the (unexcavated) area just south of Zone 20, with elements of both systems aligned roughly perpendicular to the trackway. Components of the eastern system did not extend as far north as those further west, though this is likely to reflect truncation by ploughing.

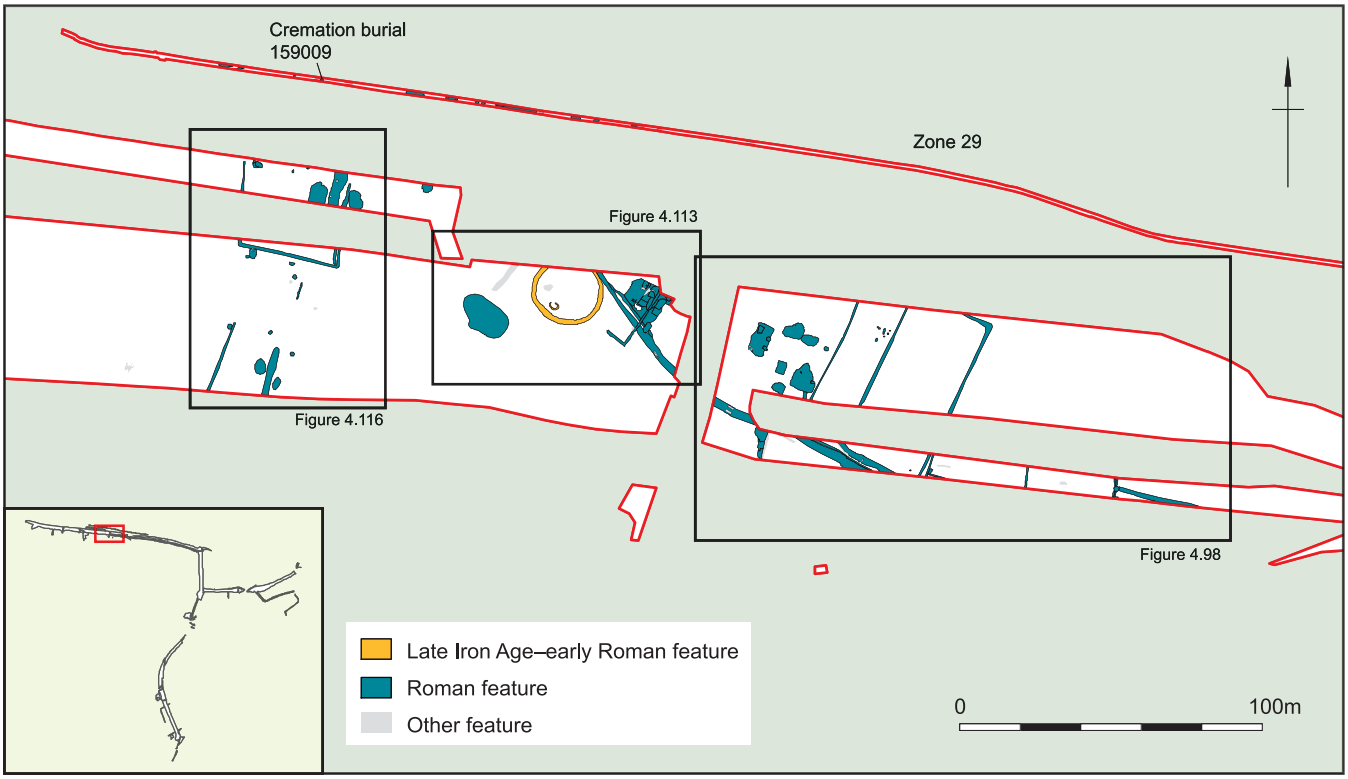


Fig 4.97 Plan of Roman features in western part of Zone 20

Roman settlement

At the western end of Zone 20 was a 3m wide, curving, metalled trackway (249061), broadly aligned WNW–ESE, with evidence for Roman settlement and other activity on either side (Figs 4.97–8, 4.116; Pl 4.16). Excavations in Zone 29 to the north-west confirmed that the trackway and settlement continued onto the slightly higher ground in that area. The settlement as a whole lay on a barely discernible promontory located approximately 100–300m west of a shallow dry valley, the course of trackway 249061 reflecting the contours of the slope, with the ground dropping away more steeply to the south.

Trackway 249061 consisted of a well-maintained metalled surface of small rounded flint nodules and gravel, and contained well-defined wheel ruts approximately 1.2m apart. The metalled surface appears to have been laid within an existing hollow-way with a concave profile. Pottery recovered from the trackway varied in date from the Late Iron Age to middle Roman period and the use of the trackway and the previous hollow-way may have spanned these periods. Small amounts of animal bone and shell, a few possible lava quern fragments, a few iron nails and a fragment of copper alloy wire were also recovered, and were probably material deposited during the use of the trackway. A short length of north-south aligned trackway of similar character (but heavily disturbed on both sides by modern features) extended to the south (193041/193042) and may have been contemporary in

Pl 4.16 Roman ring-ditch 249060, adjacent to trackway 249061 which crosses Zone 20 diagonally; middle–late Roman sunken-featured buildings under excavation to right (view from south)

use. The use of this trackway had ceased by the middle Roman period. Pit 286001, which contained 12 sherds of middle Roman pottery, along with animal bone and shell and a small number of metal objects including a copper alloy pin, was cut into the trackway, showing that it had ceased use by this period.

Features adjacent to the north-east side of the trackway (Fig 4.98) included ditch 252018, broadly dated to the Roman period by a sherd of pottery, which was traced for at least 25m before probably curving to the north, perhaps continuing as south-north ditch 288074 in Zone 20, where it was cut by a sunken-featured building (249083). Ditch 252018 was up to 0.8m wide and 0.3m deep and contemporary with trackway 249061. Another wider ditch (205059) was also aligned with the north-eastern side of the trackway and turned slightly to the north at its north-western end. It measured 2.2m in width and 0.8m in depth and had a slightly stepped, concave profile. It contained a variety of material typical of domestic refuse, including pottery of early to middle Roman date, again suggesting that activity alongside it spanned these periods. Other material included animal bone, shell, fragments of fired clay, a few nails and a small copper alloy bell (ON 860, perhaps worn by an animal). This ditch was only seen extending alongside the south-eastern part of trackway 249061 (as far as was exposed within the excavated area) suggesting that it was not a trackway ditch, but perhaps defined an enclosed area to the north-east. Ditch 205059 may have formed the south-west side of the more easterly of two apparently rectangular plots aligned on the trackway, defined by NNE–SSW aligned ditches (249086, 249087 and 249088) approximately 1m wide and up to 0.5m deep. The most easterly of these (249086) returned to the north-west at its north-eastern end, and if associated with ditch 205059 would have formed an enclosure roughly 57m x 27m internally. The enclosure (249088) to the west, of uncertain length, was only about 15m wide. The enclosure ditches were, however, narrow and relatively shallow, rather less substantial than 205059, so it is not certain that they were associated. These ditches may have been truncated, or it is possible that they were originally associated with upstanding boundaries of some form, such as hedges.

The relationship between the trackway and the enclosures is not demonstrable from stratigraphic evidence. On balance, however, it is more likely that the enclosures were secondary but that trackway and enclosures were in contemporary use for some time, along with the settlement described below.

West of the enclosures was a settlement consisting of sunken-featured buildings and pits, not necessarily enclosed, while a small cemetery (249089) lay within the adjacent narrower enclosure and a few other graves were located close to the corners of other enclosures. Middle Roman inhumation burial 128084, mentioned above, lay just south-east of the settlement enclosures, the iron fitting indicating that it was coffined.

Grave catalogue

Grave 128084 (Burial 128086)

Fig 4.99

Grave: NE–SW sub-rectangular with steep straight sides, flat base, 1.83 (truncated) x 0.81m, 0.27m deep. Fill of mid-greyish orange sandy silt with some chalk and occasional flint inclusions.

Human Remains: Burial supine and extended, coffined, south-western extent of grave not clear, *c* 40% skeletal recovery, adult *c* 35–45 yr. Male.

Grave Goods:

ON 1811 Nail, Fe, 2 fragments, coffin fitting.

ON 1812 Nail, Fe, coffin fitting.

ON 1813 Nail, Fe, probable coffin nail.

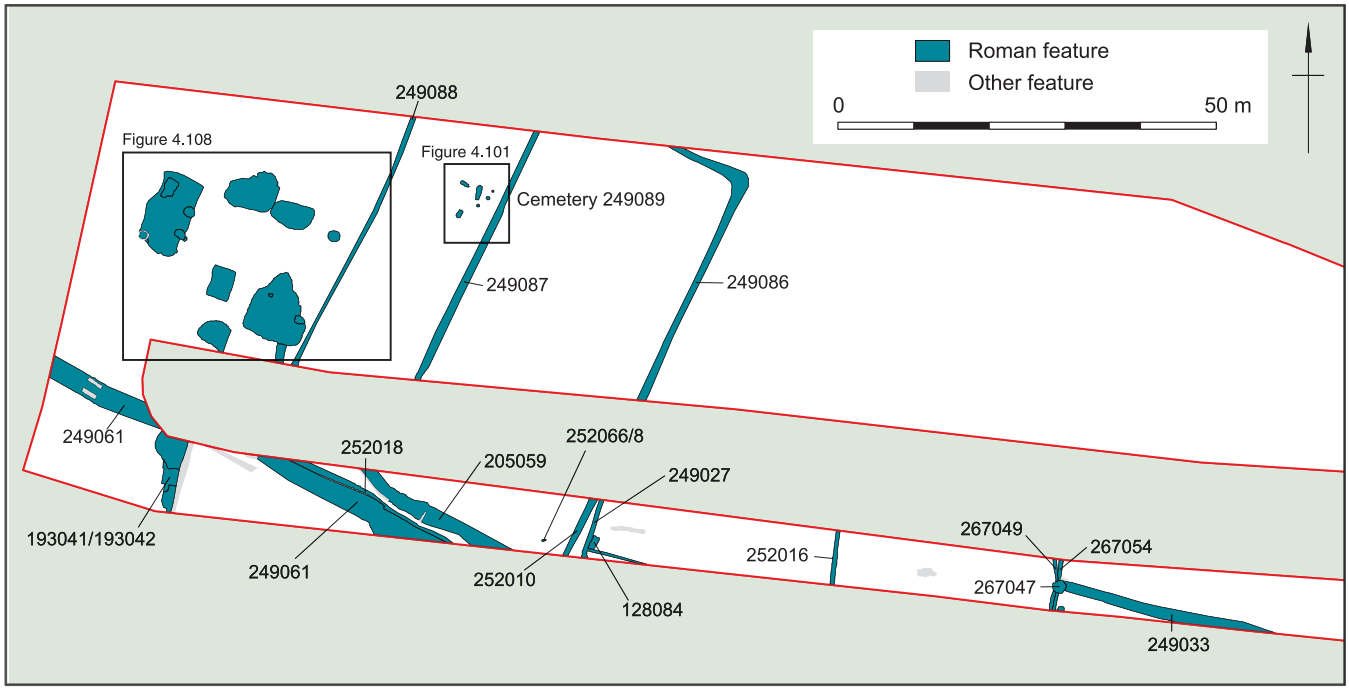


Fig 4.98 Plan of enclosures, sunken-featured buildings, trackway 249061 and cemetery 249089 (Zone 20)

ON 1814 Thameside greyware 'pie-dish' (Monaghan 1987, type 5C1), AD 120/150–230/250. Context 128085
ON 1815 Fine greyware globular-bodied beaker (Monaghan 1987, type 2I1), AD 80/90–130/140. Context 128085.
ON 1816 ?Pottery vessel located on grave plan but not located subsequently.
ON 1817 Nail, Fe, probable coffin nail.
ON 1818 Rod/shank, Fe, nail fragment, ?from coffin.
ON 1819 Rod/shank, Fe, nail shaft fragment, possibly from coffin, bent.
ON 1820 Rod/shank, Fe, square sectioned shaft fragment, possible coffin nail.

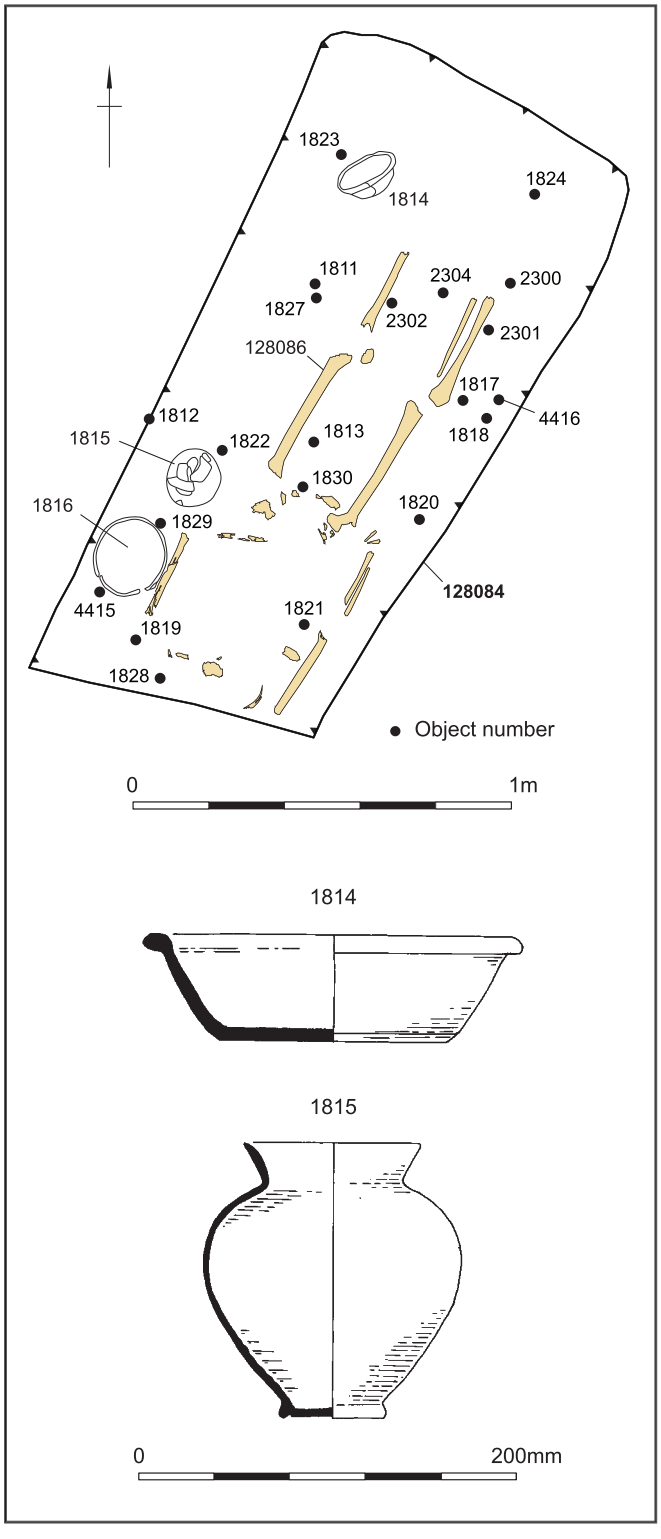


Fig 4.99 Plan of grave 128084 (Zone 20)

ON 1821 Nail, Fe, 1 nail, 4 shanks, probable coffin fittings.
ON 1822 Nail, Fe, probable coffin nail.
ON 1823 Rod/shank, Fe, small fragment.
ON 1824 Rod/shank, Fe, 3 fragments, ?coffin nails.
ON 1827 Rod/shank, Fe, 2 fragments, coffin nail/fitting.
ON 1828 Nail, Fe, 1 nail, 1 shank, mineral-preserved wood present.
ON 1829 Rod/shank, Fe, possible nail shaft fragment, from coffin, slightly bent.
ON 1830 Rod/shank, Fe, shaft fragment, probable coffin nail/fitting, mineral-preserved wood present.
ON 2300 Nail, Fe.
ON 2301 Nail, Fe.
ON 2302 Nail, Fe, head and fragments.
ON 2304 Rod/shank, Fe.
ON 4415 Rod/shank, Fe, possible nail fragment.
ON 4416 Nail, Fe, coffin nail fragment.

To the west of ditch 252010, in the south-east corner of the enclosed space, was a cremation burial (252066) with an adjacent accessory vessel (ON 1826) recorded as a separate feature (252068).

Grave catalogue

Grave 252066/8 (Cremation burial 252067)
Fig 4.100, Pl 4.17
Grave: Sub-circular very shallow cut, concave base – 0.31m diameter, 0.12m deep. Fill of yellowish brown silty clay loam with occasional chalk inclusions.
Human Remains: Urned, 489.9g, adult >18 yr. ?Female.
Grave Goods:
ON 1825 Very hard-fired grog-tempered ware, flat base from a medium/large jar; post-depositional limescale deposits on exterior surface only, used as container for the cremated human remains, mid-/late 2nd–3rd century AD (not illustrated).
ON 1826 Hard-fired fine grog-tempered ware, flat base from a small/medium sized jar, used as container for the cremated human remains, mid-/late 2nd–3rd century AD (not illustrated).
ON 4412 Bracelet, Cu alloy. Simple form with terminals slightly overlapping.
ON 4413 Fragments of 'snakechain', presumably a bracelet, formed from iron wire wrapped with thin copper alloy strips (not illustrated).

Pl 4.17 Copper alloy bracelets and ring above cremated bone in vessel from grave 252066/8 (Zone 20)

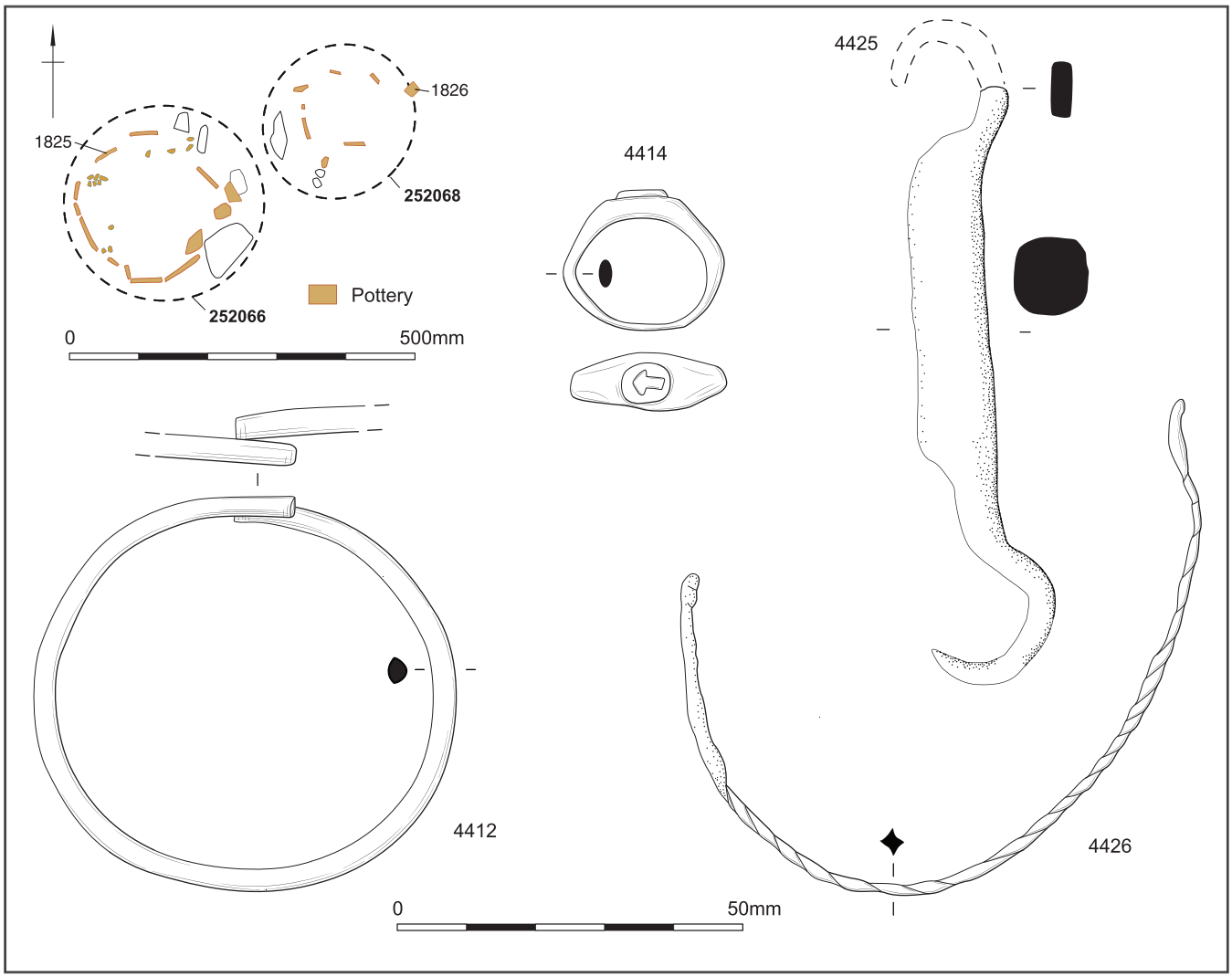


Fig 4.100 Plan of cremation graves 252066 and 252068 (Zone 20)

ON 4414 Finger-ring, Cu alloy. Bezel contains green glass intaglio with simple decoration.
ON 4424 Nail, Fe, 2, plus 1 nail fragment and a length of bar tapered at each end (not illustrated).
ON 4425 Miscellaneous objects, Fe, 3 (strip, bar and rod) and a possible snaffle bit link, this last a bar of sub-square section with loop at one end and stub of possible loop at the other.
ON 4426 Bracelet of twisted wire, Cu alloy.
Bracelets and ring unburnt; placed over cremated bone in pot ON 1826.

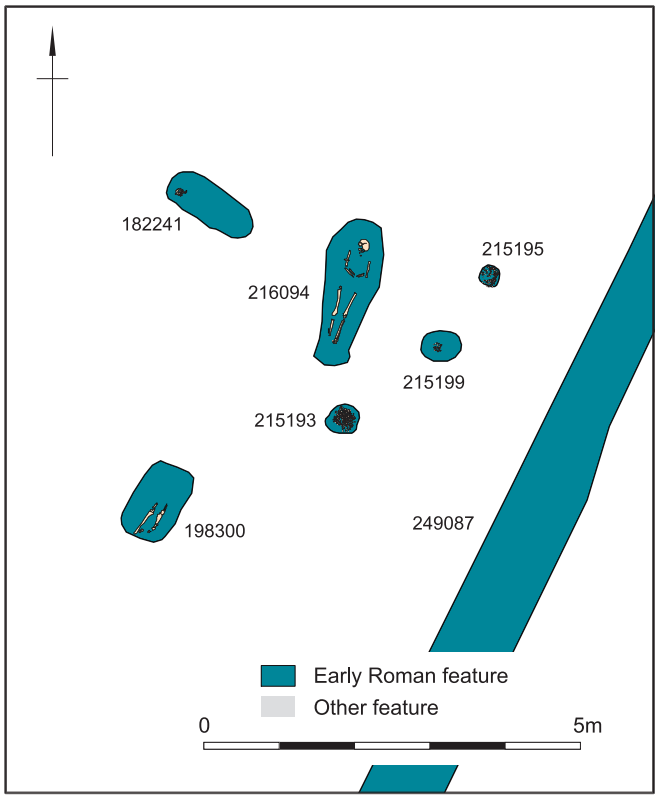


Fig 4.101 Plan of Roman cemetery 249089 (Zone 20)

Middle Roman cemetery 249089

Within the narrow enclosure defined by ditches 249087 and 249088 were three inhumation burials and three cremation burials, clustered in a group on the east side, the cremation burials in a broad line (Fig 4.101). The inhumation burials were all interred in coffins and laid in an extended, supine position, in graves of varying orientation. All six burials were accompanied by pottery vessels and four vessels were present with cremation burial 215199. The pottery dates the use of this cemetery to the middle Roman period.

Grave catalogue

Inhumation burials

Grave 182241 (Burial 182242)
Fig 4.102
Grave: NW–SE, sub-rectangular with steep straight sides, flat base – 1.28 x 0.51m. Fill of mid-yellowish brown silty clay loam with common chalk inclusions.
Human Remains: Burial position not known, probable gap of 0.1m between head and NW end of grave, *c* 2% skeletal recovery, infant *c* 2–3 yr.
Grave Goods:
ON 3776 Nail, Fe, ?coffin nail, square sectioned.
ON 3777 Nail, Fe, square sectioned shaft, possible coffin nail.
ON 3778 Nail, Fe, nail head, possible coffin nail.
ON 3779 Nail, Fe, shank.
ON 3780 Nail, Fe, square sectioned shaft, possible coffin nail.
ON 3781 Cologne colour-coated ware hunt cup, *c* AD 120–150. Capacity 225ml.
ON 3782 Central Gaulish samian form 31, stamped by Tituro, AD 170–190 (Stamp cat no 24). Rim chipped in antiquity.
ON 3783 Greyware plain globular beaker (Monaghan 1987, type 2I1), AD 80/90–130/140. Capacity 500ml.

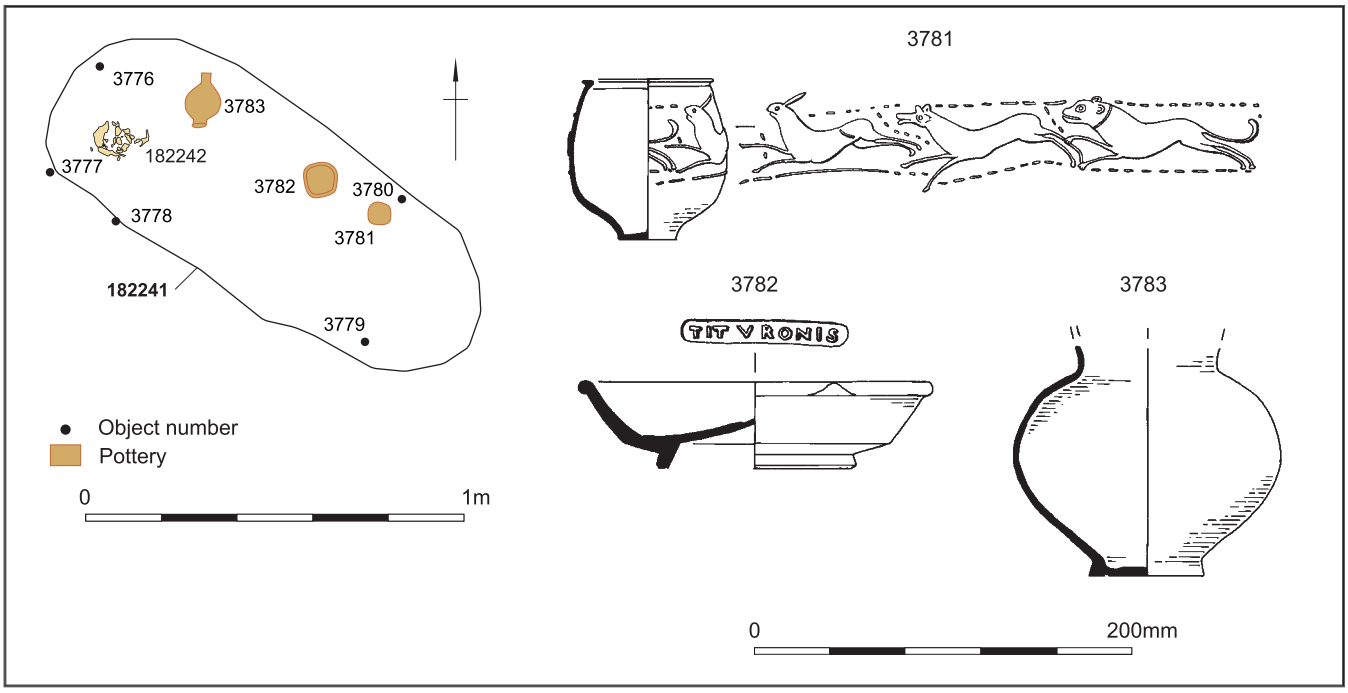


Fig 4.102 Plan of grave 182241 (Zone 20)

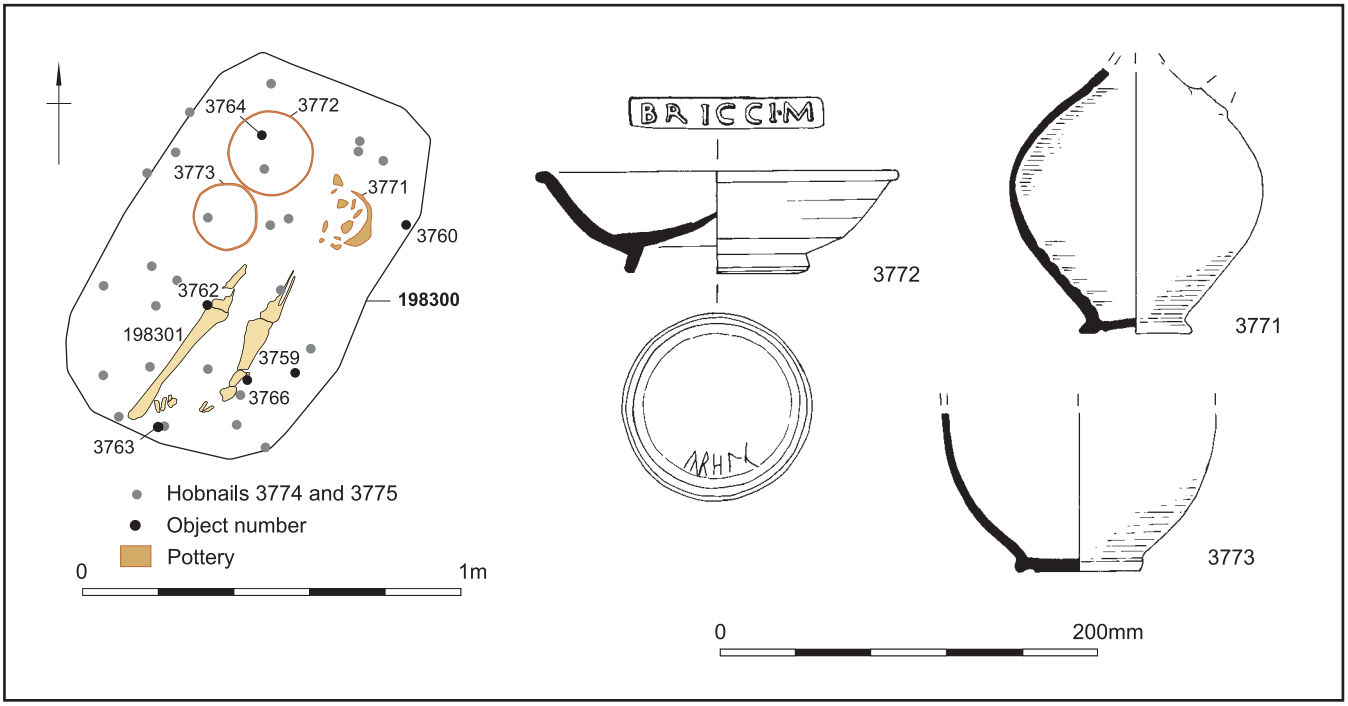


Fig 4.103 Plan of grave 198301 (Zone 20)

Grave 198300 (Burial 198301)
Fig 4.103
Grave: NE-SW, Sub-rectangular cut, very shallow – 1.07 x 0.68m. Fill of mid-yellowish brown silty clay loam.
Human Remains: Coffined burial, supine and extended, 15% skeletal recovery, subadult *c* 12–14 yr.
Grave Goods:
ON 3759 Nail, Fe, bent nail.
ON 3760 Rod/shank, Fe, ?Nail/rod fragment.
ON 3761 Nail, 2 x nail fragments.
ON 3762 Nail, F.e

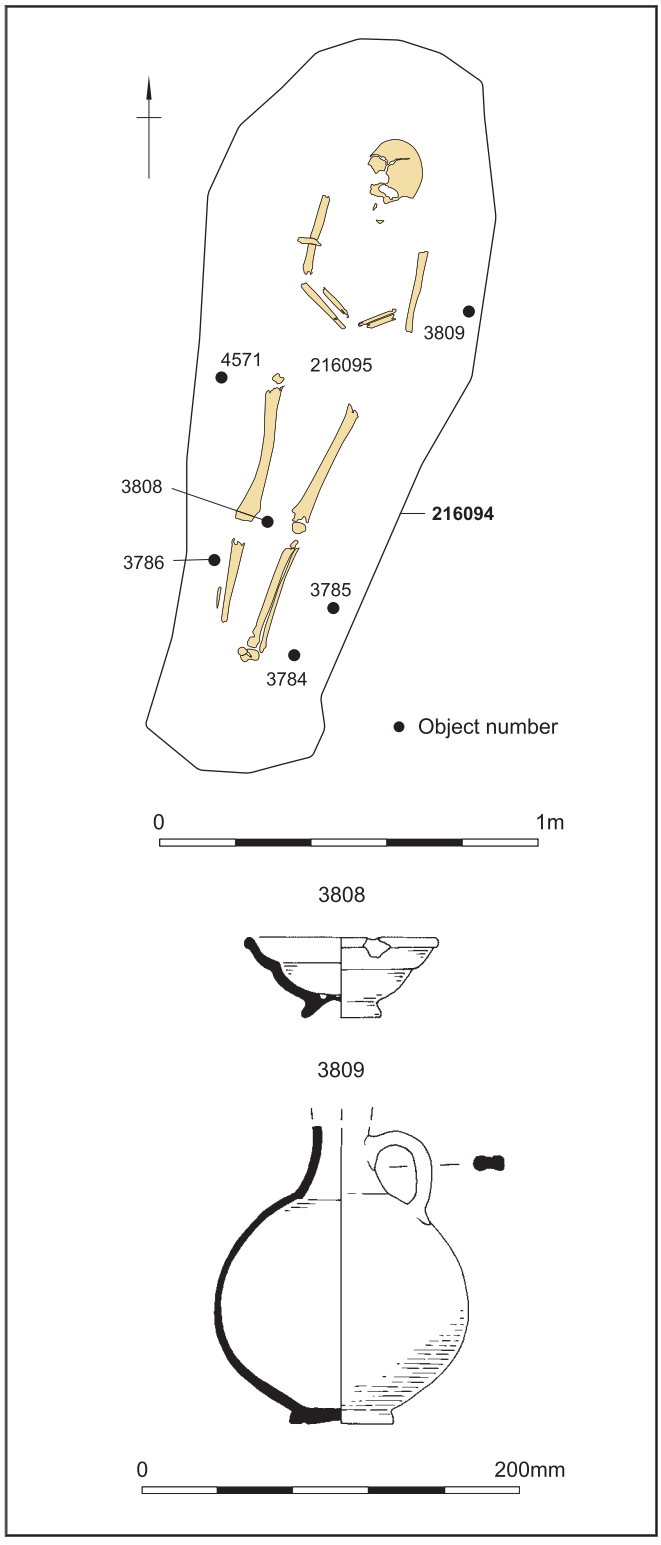


Fig 4.104 Plan of grave 216094 (Zone 20)

ON 3763 Fitting, Fe, 2 rectangular sectioned bar fragments, possible coffin fittings.
ON 3764 Nail, Fe, 2 nail fragments.
ON 3766 Nail, Fe.
ON 3771 White-slipped red ware pear-shaped flagon, 2nd century AD+.
ON 3772 Central Gaulish samian form 31, stamped by Briccus, AD 155–175 (Stamp cat no 17). Graffito consisting of five letters, probably a name, on the underside of the base.
ON 3773 Fine greyware globular-bodied beaker base (Monaghan 1987, type 2I), AD 80/90–130/140.
ON 3774 Hobnail, Fe, 17 hobnails.
ON 3775 Hobnail, Fe, 9 hobnails.

Grave 216094 (Burial 216095)
Fig 4.104
Grave: NNE–SSW, sub-rectangular cut with steep straight sides, flat base – 2.01 x 0.77m. Fill of mid-yellowish brown sandy clay loam with common chalk inclusions.
Human Remains: ?Coffined burial, supine and extended, arms flexed across torso, probable gap of *c* 0.25m between head and NNE end of grave. *c* 35% skeletal recovery. Adult 20–25 yr. ?Male.
Grave Goods:
ON 3784 Rod/shank, mineral-preserved wood.
ON 3785 Nail, Fe, in 2 pieces, square sectioned shaft.
ON 3786 Nail, Fe, 3 fragments, square section.
ON 3808: Central Gaulish samian ('pre-export Lezoux fabric') form 27 cup, Trajianic (AD 98–117). Worn, abraded condition suggests it was probably old at the time of deposition. Capacity 100ml.
ON 3809 White-slipped red ware globular-bodied flagon, 2nd century AD. Capacity 800ml.
ON 4571 Nail, Fe, 4 nails and 1 shank, some with mineralised wood traces.

Cremation burials

Grave 215193 (Burial 215191)
Fig 4.105
Grave: Sub-circular cut, concave base – 0.38m diameter, 0.16m deep. Fill of mid-greyish brown silty clay loam.
Human Remains: Urned, 1357.7g, 1) adult *c* 20–30 yr. ?female. 2) Infant *c* 2 yr.
Grave Goods:
ON 896 Grog-tempered ware base and lower body from a large jar, used as container for the cremated human remains, *c* 2nd–3rd century AD.
ON 4029 Central Gaulish samian cup form 33, stamped by Doccius ii (die 4a) of Lezoux, AD 160–200 (Stamp cat no 19). Graffito consisting of the letters BLATCVS, probably a name, scratched into the exterior surface while the vessel was inverted. Capacity 150ml. Context 215194.
ON 4030 Oxidised ware small globular bodied flask or flagon, 2nd century AD. Context 215194.
ON 4031 Central Gaulish (black) samian beaker – Déchelette form 74 with two handles and moulded decoration, mid-2nd century AD. Context 215194.

Grave 215195 (Burial 215192)
Not illus
Grave: Sub-circular very shallow, flat base – 0.25 x 0.22m, 0.09m deep. Fill of light yellowish brown silty clay loam.
Human Remains: Urned, 766.3g, adult >45 yr. ?Male.
Grave Goods:
ON 895 Grog-tempered ware flat base and lower body from a large jar, used as container for the cremated human remains, *c* 2nd–3rd century AD (not illustrated).

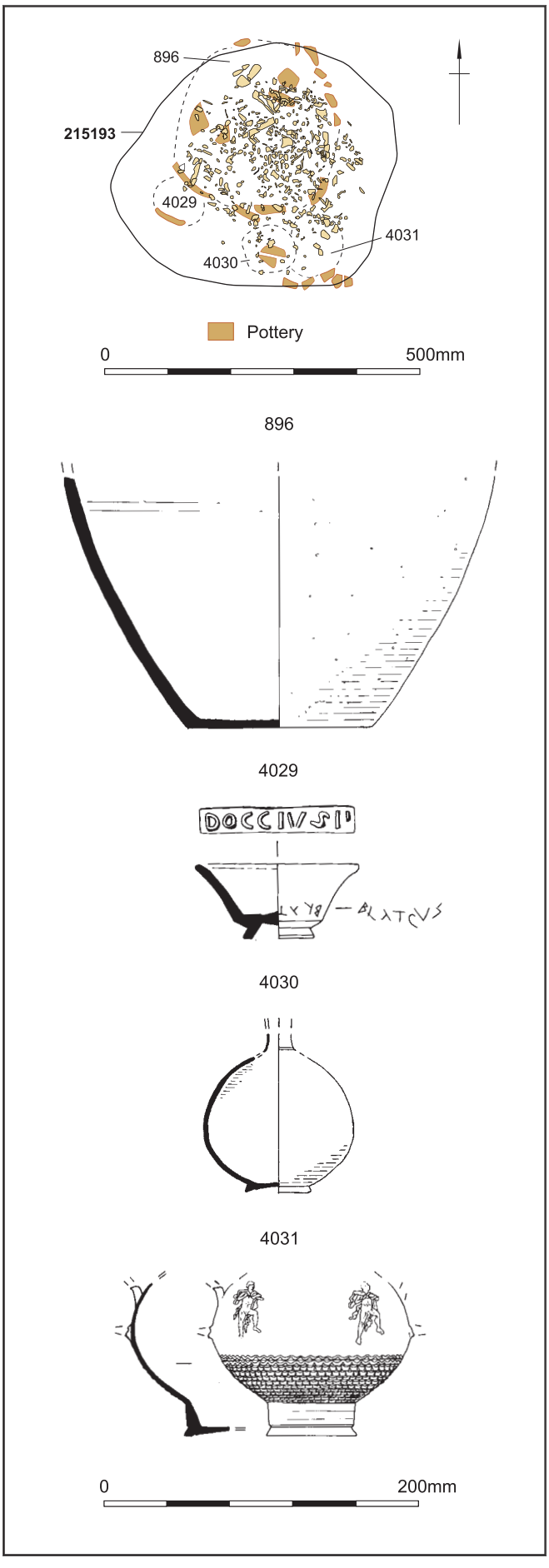


Fig 4.105 Plan of cremation grave 215193 (Zone 20)

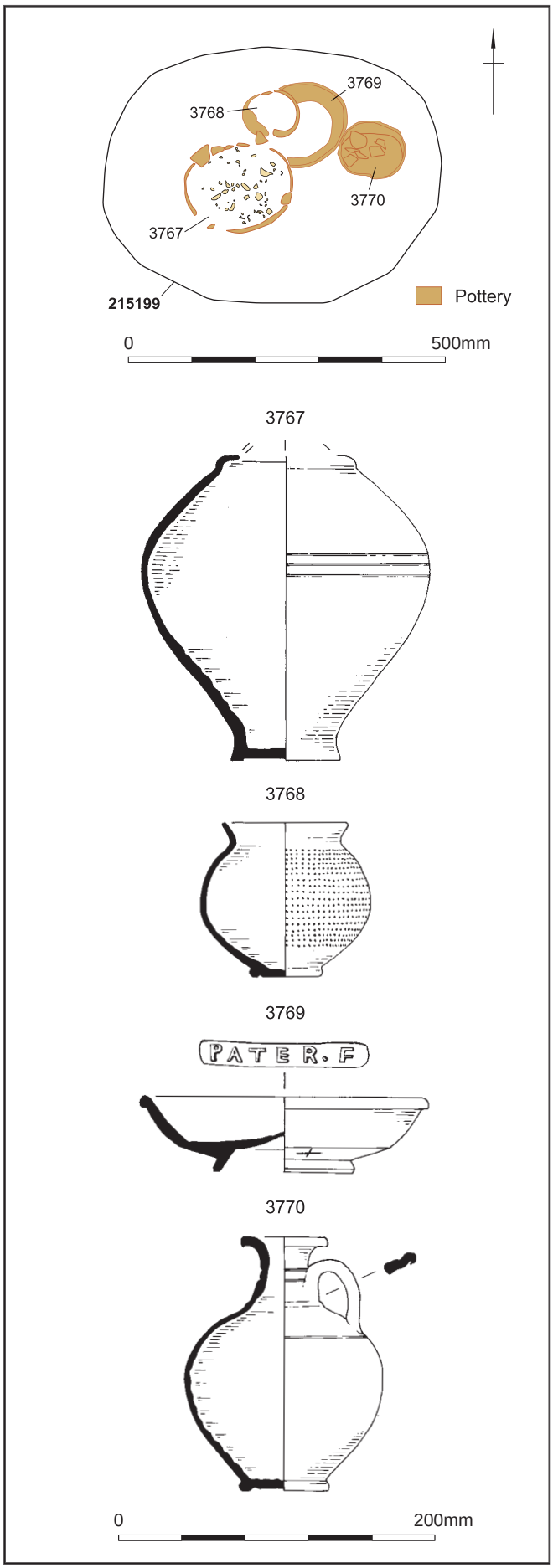
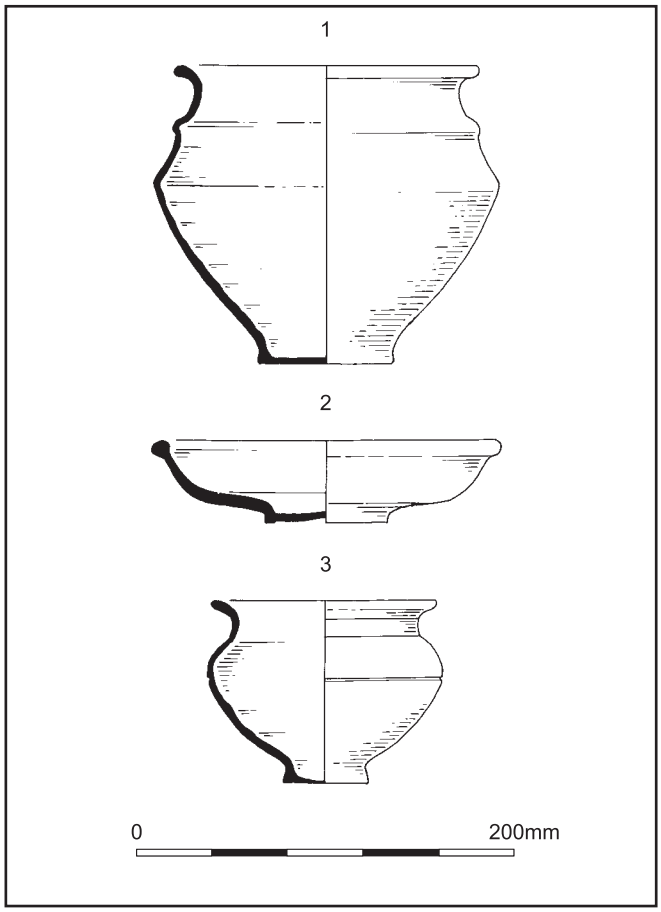


Fig 4.106 Plan of cremation grave 215199 (Zone 20)

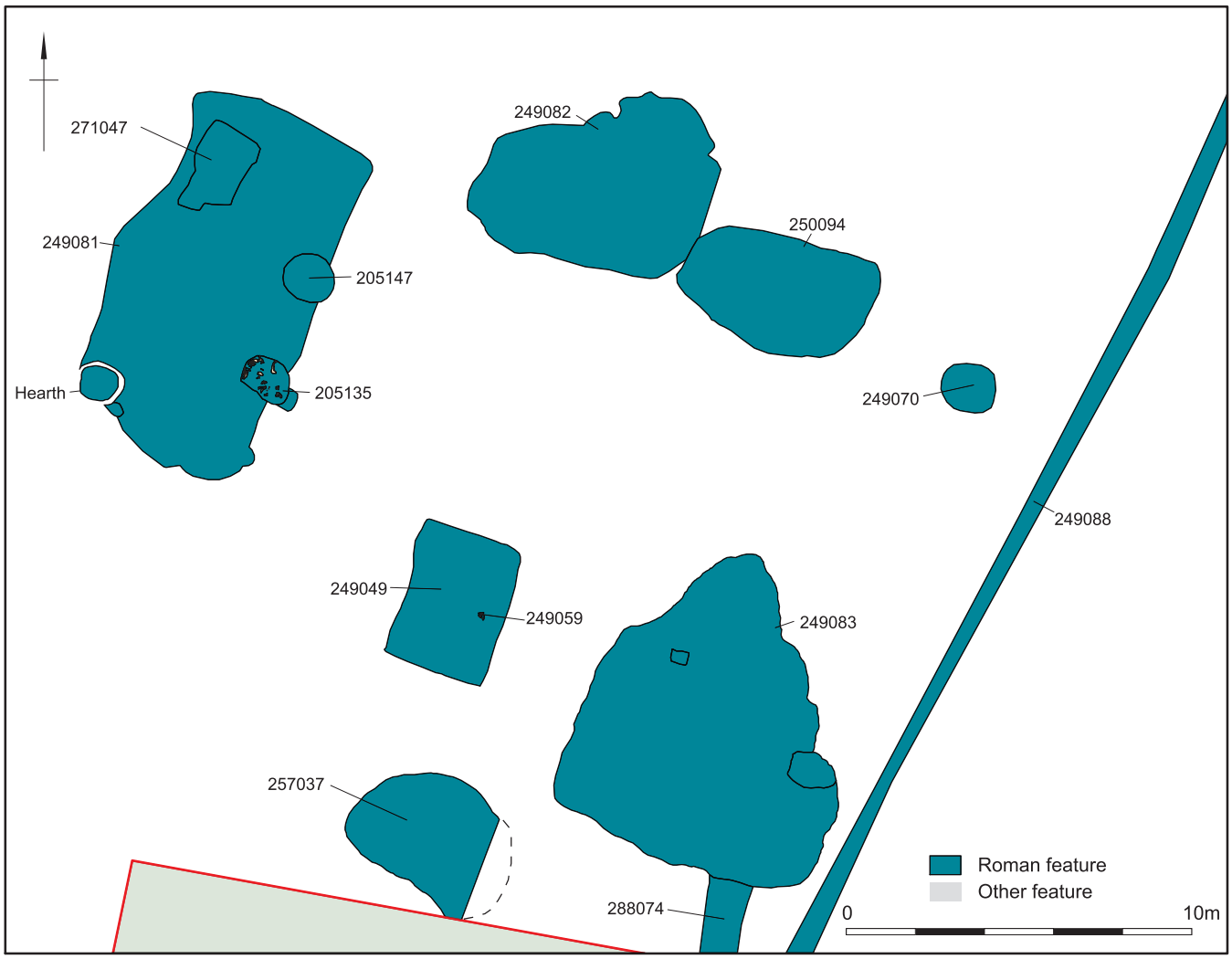


Grave 215199 (Burial 215197)
Fig 4.106
Grave: Sub-circular, very shallow, flat base – 0.53m x 0.4m. Fill of dark yellowish brown silty clay loam.
Human Remains: Urned, 337.1g, infant/juvenile *c* 5 yr. ??Male.
Grave Goods:
ON 3767 Greyware narrow-necked jar (Monaghan 1987, type 3A3), used as container for the cremated human remains, *c* 1st–3rd century AD.
ON 3768 Fine greyware poppyhead beaker (Monaghan 1987, type 2A2), AD 80/90–120.
ON 3769 Central Gaulish samian form 18/31 dish, stamped by Pater ii, AD 130–150 (Stamp cat no 21). Graffito consisting of the letter or number X on exterior surface of the lower body. Capacity 300ml .
ON 3770 Oxidised ware disc-mouthed flagon, 2nd–3rd century AD. Context 215197.

Remains of a further Roman urned cremation burial (159009) were excavated to the north within the narrow confines of the pipe trench in Zone 29. This burial almost certainly belongs to the general spread of middle–late Roman settlement and burial-related activity recorded in Zone 20. Cremated bone from the

Fig 4.107 (left) Pottery vessels from cremation grave 159009 (Zone 29)

Fig 4.108 (below) Plan of eastern group of Roman sunken-featured buildings in Zone 20



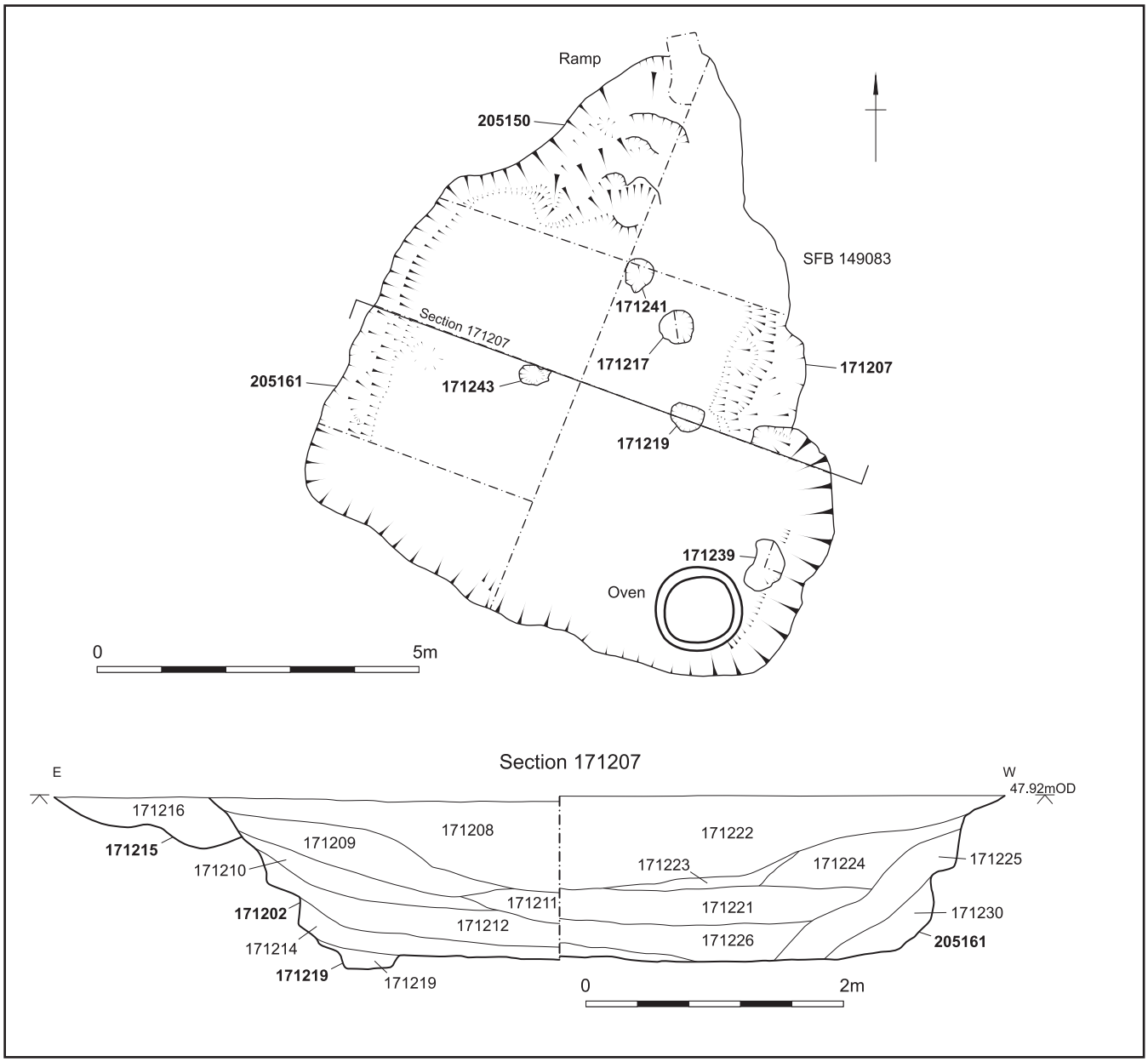


Fig 4.109 Plan and section of middle–late Roman sunken-featured building 249083 (Zone 20)

burial was dated to cal AD 60–220 (1885±30 BP, SUERC-40282).

Grave catalogue

Grave 159009 (Burial 159014)

Fig 4.107

Grave: Sub-circular very shallow cut, flat base – 0.25m x 0.22m, 0.09m deep. Fill of mid-grey silt with frequent chalk inclusions.

Human Remains: Urned (and redeposited), 268.6g, adult *c* 30–50 yr. ?Female.

Grave Goods:

1 Fine greyware carinated bowl (Monaghan 1987, type 4G1), used as container for the cremated human remains, AD 80–110/120. Context 159011.

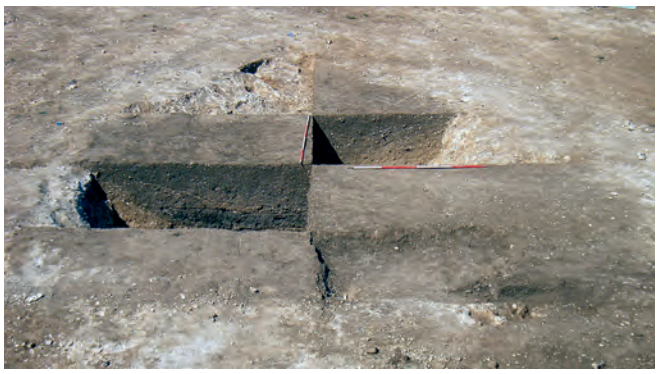
2 Greyware dish with curving walls (Monaghan 1987, type 7A2), AD 43/70–120. Capacity *c* 400ml. Context 159012.

3 Fine greyware S-profile bowl (Monaghan 1987, type 4A4), AD 50/70 – 200/300. Context 159013.

Settlement

The structural elements of the Zone 20 settlement comprised a group of five sunken-featured buildings (SFBs) to the west of ditch 249088. Four examples lay close together (249049, 249081, 249082 and 249083) with another (249085) a short distance to the west (Figs 4.108, 4.113).

The south-easternmost feature of the group, SFB 249083 (Fig 4.109; Pl 4.18) consisted of a large, irregular cut measuring approximately 8.9m NNE–SSW and 7.9m WNW–ESE. It was just over 1.3m in depth, the deepest of the sunken-featured buildings in Zone 20, and there was a ramp with what appeared to be three very roughly cut steps at the north end. The south side of the pit was near vertical, the west side had a small step about half way down, whilst on the east side there was a discontinuous series of small steps and slopes possibly resulting from erosion of the edges, though this was not evident from the fills which extended up to the side of



Pl 4.18 Sunken-featured building 249083 (Zone 20; view from south)

the pit and contained no substantial deposits of eroded chalk. Five shallow, irregularly spaced postholes within the level and even base of the cut probably related to the superstructure (171239, 171219, 171243, 171217 and 171241). The interior appeared to have a beaten chalk floor, effectively the worn surface of the exposed natural, and in the south-east corner, close to the edge of the pit, were the remains of a circular hearth or oven, approximately 1m in diameter, with the upstanding remnants of a clay lining. The fills of SFB 249083 were rich in material typical of domestic rubbish and suggest that the void left after the use of the structure ended was backfilled with rubbish from nearby dwellings. Pottery ranged from a small number of Roman sherds to more significant amounts of middle and late Roman material, suggesting that the use of the structure probably commenced in the middle Roman period and material was dumped in the disused feature into the late Roman period. The fills also included large amounts of tile, animal bone (cattle predominating), shell (mainly oysters) and fired clay, this last perhaps from the superstructure of this or a nearby dwelling. Two fragments of a pipeclay figurine of 'Dea Nutrix' (nursing goddess) type came from the lower/basal fills (see below and Vol 2, Nelson, Chap 7). Of particular note were the large amounts of metal objects recovered, particularly from the south-western corner of the structure. Numerous strip and plate fragments of copper alloy and iron were accompanied by rivets and offcuts. Along with at least 2kg of iron smithing slag these attest to the occurrence of metalworking in the vicinity and the dumping of waste in this feature.

SFB 249049 (Fig 4.110), situated to the west of 249083, was much smaller in size, but regular in plan and profile, and may have been an ancillary structure. It was aligned NNE–SSW on its long axis, and measured 4m in length, 3m in width and 0.32m in depth. The fairly shallow cut had concave sides and a flat base; no related postholes were visible. The remains of two neonates (249059) (0–2 weeks) were found together on the base of the cut in the central eastern area. There was no grave cut, suggesting that the deposition of the remains marked the end of the use period of the structure. The remains were disarticulated but could easily have been disturbed by the backfilling of the structure. The pottery assemblage suggests that the

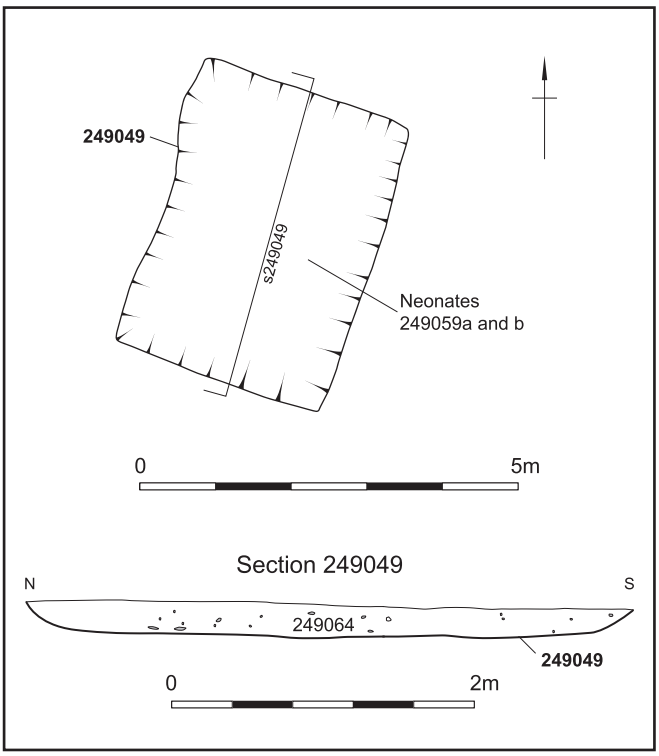


Fig 4.110 Plan and section of middle–late Roman sunken-featured building 249049 (Zone 20)

disuse and backfilling phase of the structure took place in the middle Roman period. Small amounts of other material suggesting domestic waste included animal bone and ceramic building material (CBM).

Grave catalogue

Burials 249059a and b

No grave cut visible – disarticulated burials found together in base of SFB 249049.

Human Remains: 249059a – *c* 15% skeletal recovery. Neonate *c* birth–2 wk.

249059b – *c* 25% skeletal recovery. Neonate *c* 38–40 wk.

To the north-west, SFB 249081 (Fig 4.111; Pl 4.19) was also aligned NNE–SSW on its long axis. This was a much larger structure (10.93 x 6.2m), but only 0.3m deep, and its northern half was very badly disturbed by

Pl 4.19 Detail of oven in corner of sunken-featured building 249081 (Zone 20; view from south-east)

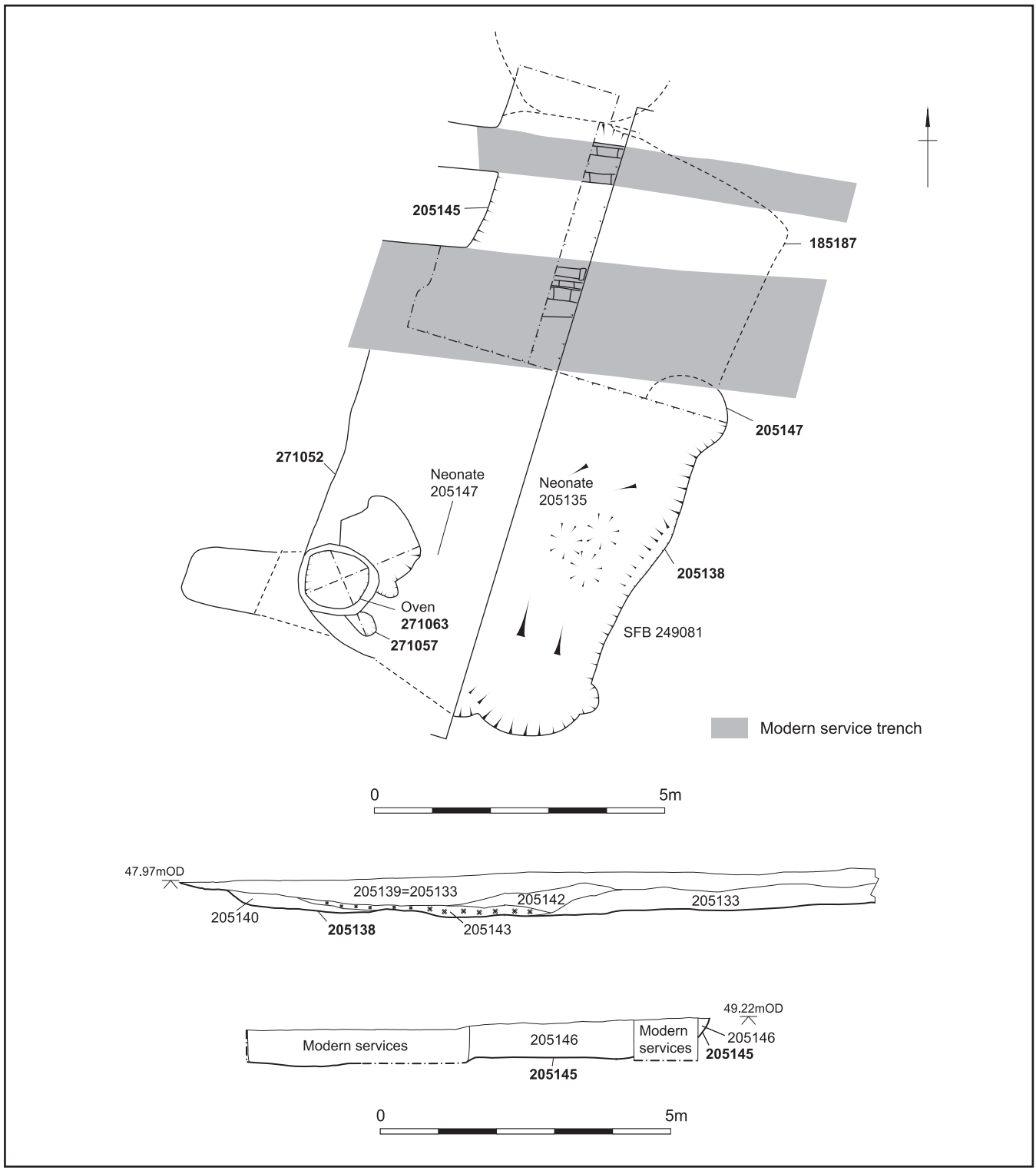


Fig 4.111 Plan and sections of middle–late Roman sunken-featured building 249081 (Zone 20)

modern service trenches. A hearth or oven (271063), located in the south-west corner, was approximately 1.2m in diameter, with the floor and wall, parts of which survived, made of clay. Adjacent to this was a shallow posthole (271057), but no further postholes that might have related to the superstructure of the building itself were revealed. No floor layers within the interior were identified, the base of the pit probably serving this purpose. Like SFB 249049 this structure appears to have become disused and been infilled during the middle Roman period, with the majority of the pottery recovered from the fills being of this date. The simple sequence of fills included one (205143) that contained noticeably more charcoal. A moderate amount of other material was recovered, including some animal bone and shell, tile, fired clay and iron objects (mostly nails). Around 0.5kg of slag was also recovered. Probably during an early stage of infilling, though this was not clear from the fills, a grave (205135) was cut and within this was a neonate (205137) aged birth–2 weeks. Another neonate, also birth–2 weeks (205149), came from grave 205147 that cut the upper fills, on the

western side of the abandoned structure. The remains of a third, younger neonate (271058) came from the south-eastern part of the structure, probably from within fill 205139, but no grave cut could be discerned.

Grave catalogue

Grave 205135 (Burial 205137)
Not illus
Grave: Sub-circular, with moderate concave sides, concave base – 0.8 x 0.6m, 0.2m deep (base at 47.34m OD).
Human Remains: Burial disarticulated, *c* 50% skeletal recovery, neonate *c* birth–2 wk.

Grave 205147 (Burial 205149)
Not illus
Grave: Sub-rectangular, with steep straight sides, flat base – 1.3 (truncated) x 0.5m, 0.3m deep (base at 47.83m OD).
Human Remains: Burial disarticulated, *c* 25% skeletal recovery, neonate *c* birth–2 wk.

Burial 271058
Not illus
No grave cut visible – burial found in fill of SFB 249081 (probably from context 205139).
Human Remains: Burial disarticulated/redeposited. *c* 30% skeletal recovery. Neonate *c* 38–40 wk.

Adjacent to SFB 249081 was a pair of somewhat irregular, sub-rectangular features on a WNW–ESE axis, both heavily disturbed by the modern features that cut SFB 249081 (Fig 4.112). Feature 249082 was 6.62m long, 5.18m wide and 0.32m deep. No definite postholes were noted that might attest to the presence of a superstructure, but a number of possible examples were present. Equally, no hearth was identified, but since a substantial proportion of the interior had been disturbed by service trenches the significance of this is uncertain. Interpretation as either a small ancillary structure or perhaps just a large shallow pit is possible, although the very shallow depth perhaps makes the former more likely. The pottery assemblage recovered from the backfill was mostly of middle Roman date, suggesting that the feature was used and backfilled in this period. The other material recovered from the fill was again typical of domestic rubbish, with frequent animal bone and small amounts of CBM, fired clay and slag.

Just to the east of feature 249082 was feature 250094, which measured 3.02m in length, 2.65m in width and 0.88m in depth, substantially deeper and more steep-sided than 249082. Although the two features had a marginal relationship, suggesting broad contemporaneity, it is possible that 250094 was slightly the later of the two. Feature 250094 had been backfilled with domestic rubbish, including a knife (ON 3181) animal bone, oyster shells, a double-ended bone pin (ON 890), CBM, iron nails and a few sheet fragments, some slag and a few worked stone items, including a fragment of whetstone (ON 4164). The pottery recovered suggests a middle Roman date for the infilling, contemporary with that of the surrounding settlement features.

To the south, another large shallow feature (257037, Fig 4.108) may also have been a small sunken-featured building/ancillary structure although this is based purely on its proximity to the others and its shallow depth, which suggests that it was not dug specifically as a rubbish pit. The feature was irregular in plan (truncated by a modern feature at its east end) and measured 4.5m in length, 3.3m in width and 0.34m in depth, the profile being slightly irregular but very gently sloping. The backfill also contained middle Roman pottery, accompanied by small amounts of animal bone and CBM.

Pit 249070 was located in the north-east of the group. It was circular, with steep straight sides and a concave base, measuring 1.66m in diameter and 0.8m deep. The

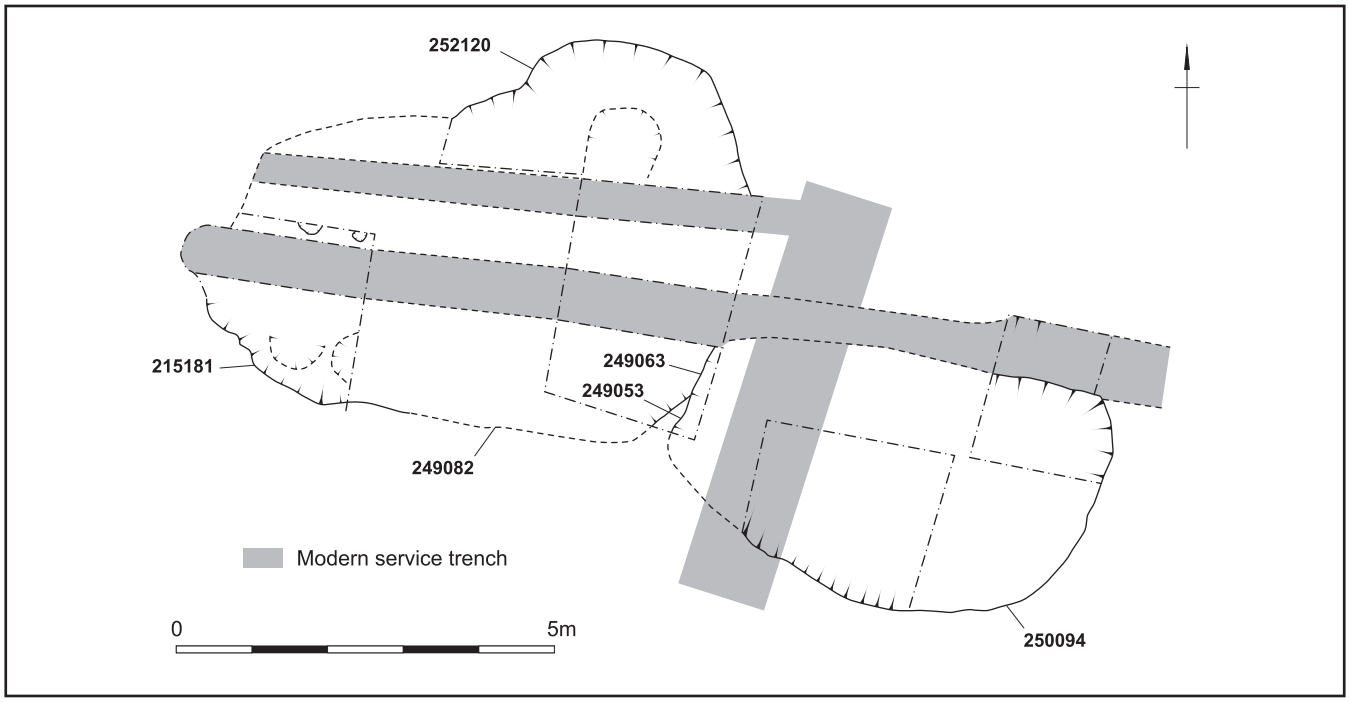


Fig 4.112 Plan of middle–late Roman sunken-featured buildings 249082 and 250094 (Zone 20)

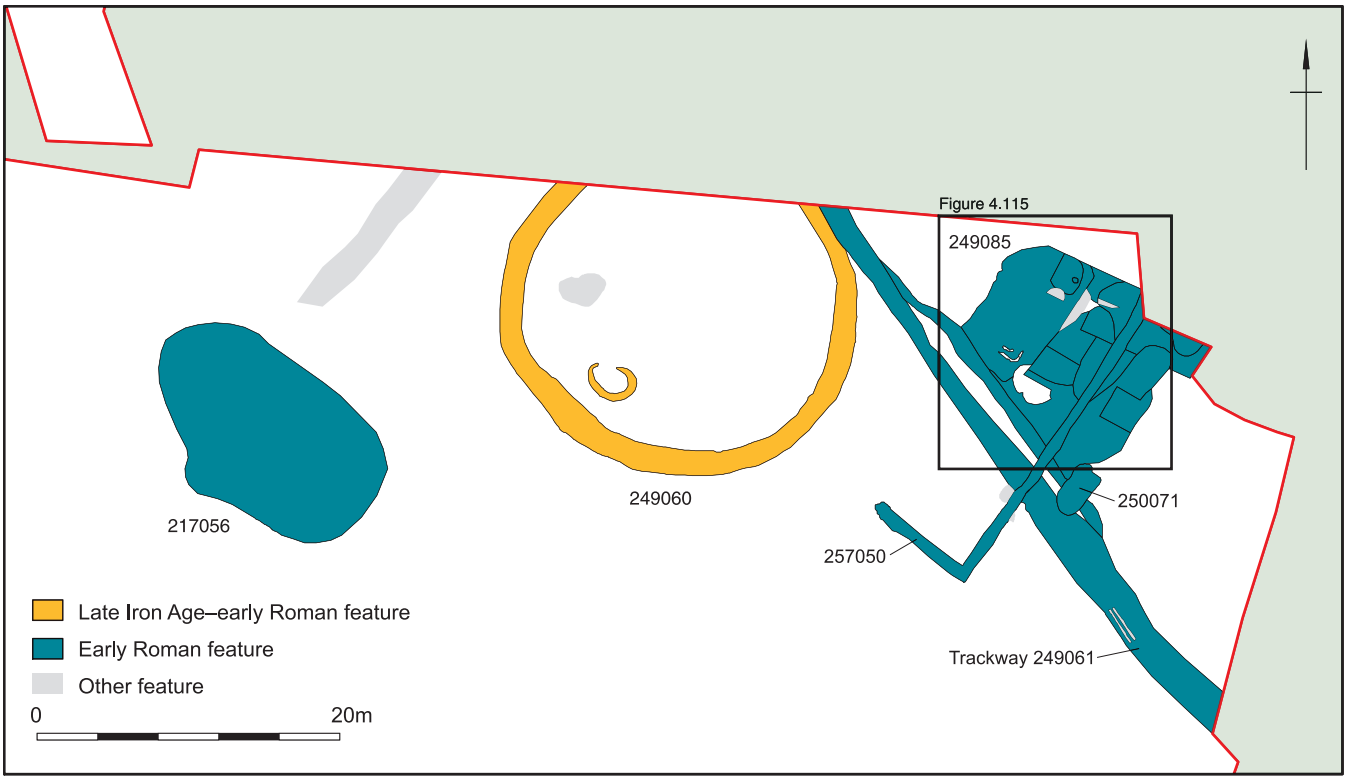


Fig 4.113 Plan of trackway 249061, middle–late Roman sunken-featured building 249085 and ring-ditch 249060 (Zone 20)

three fills contained pottery of middle Roman date and a small amount of animal bone and shell, perhaps suggesting that it was a rubbish pit related to the use of the sunken-featured buildings.

Further west trackway 249061 became narrower as it turned to the north-west (Figs 4.97, 4.113). Immediately adjacent to the trackway on its north-east side was a complex of features, including SFB 249085 which lay 35m west of the structures described above. The area was, unfortunately, again quite badly disturbed by modern services (including a live gas main).

The earliest feature in the area, just west of SFB 249085 and the trackway, was a shallow ring-ditch (249060) (Pl 4.16) at most only 0.25m deep but up to 2.5m wide and enclosing an area 20m in diameter. The ditch fill included a relatively small amount of animal bone, some worked flint broadly dated to the prehistoric period (but with one piece of Bronze Age date), and a fragment of human bone, from an adult male approximately 20 years of age. The pottery assemblage (11 sherds) included Middle to Late Iron Age material but also two sherds broadly assigned to the Roman period. The Roman trackway 249061 marginally cut the fill of the ring-ditch, but essentially seems to have respected its location. This might suggest the existence of a Late Iron Age–early Roman precursor of the more formal Roman trackway, with which the ring-ditch was closely associated.

The later, intensive activity on the north-east side of trackway 249061 was separated from it by a length of ditch or gully, 249267. This presumably served as both a boundary and a drainage feature, but its relationships both to the trackway (which it possibly cut) and to the SFB (249085) were not clear, although broad contemporaneity is assumed. The earliest features in this area were a number of irregular pits (Figs 4.114 and 4.115), including features interpreted as possible quarry pits (215215, 215225, and 215231, an unnumbered feature filled by 215210 and further unnumbered features to the south). These features were not well understood but seem certain to have predated the sunken-featured building. Most were very poorly dated, but pit 215231, only partly sealed by later surfaces (see below), contained a typical assemblage of domestic debris, and a distinctive layer of oyster shells, indicating a single deposition event (see below). Less certain is the status of features such as 252105, at the north end of the building, which was possibly another early feature but may have been contemporary with the structure (see below and Fig 4.115).

The sunken-featured building was a relatively complex structure and owing to the presence of quarry pits beneath and modern disturbance at its north end it was not easily defined (Fig 4.115). It was aligned roughly NNE–SSW on its long axis and may have been as much as 10m long, with a maximum width of 5.5m. It was up to 0.55m deep. A very crude 'wall' of flint and several quern fragments (134094) about 5m long seems to have been intended to reinforce the sloping east side of the structure where it was cut through the backfill of earlier features. Towards the south-east corner of the building was an L-shaped oven (193070) constructed of stone and lined with clay aligned perpendicular to the long axis (Pl 4.20). The area around the oven was heavily scorched and rich in ash deposits. North of the oven and parallel to it was a narrow slot of uncertain function, while north again was an elongated, steep sided oval pit (215234, 1.30m long, 0.35m deep), roughly in the centre of the building. A patch of chalk

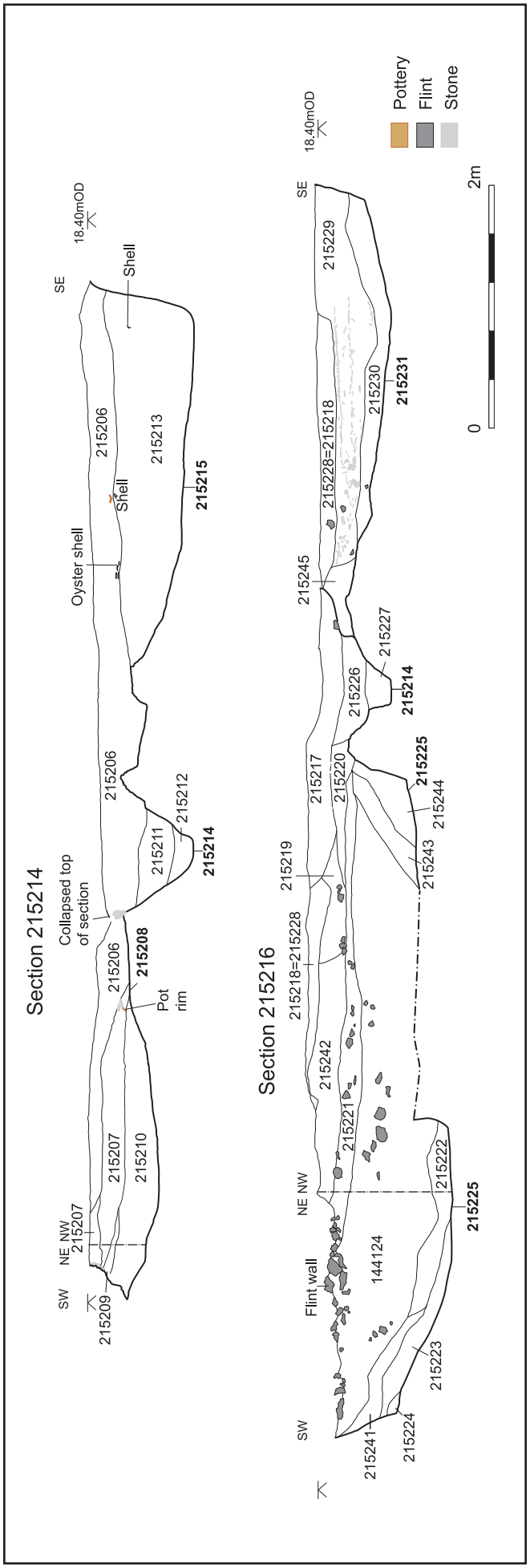


Fig 4.114 Sections of pits and levelling layers adjacent to middle–late Roman sunken-featured building 249085 (Zone 20)

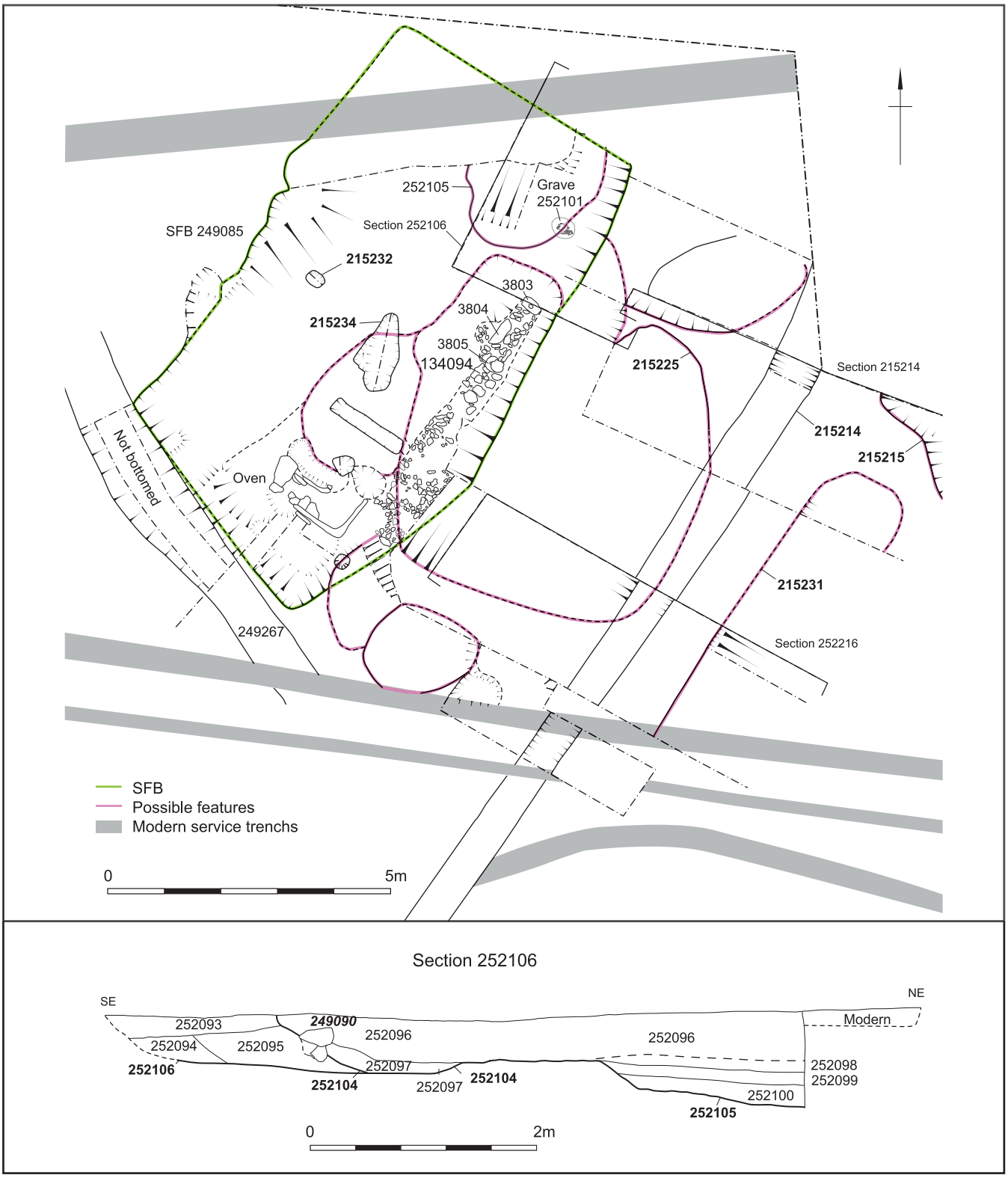


Fig 4.115 Plan and sections of middle–late Roman sunken-featured building 249085 and adjacent features (Zone 20)

placed on the top of the uppermost fill might have been a surviving fragment of a floor surface, or possibly even a post pad. A small posthole, 215232, 1.2m west of 215234 was the only certain feature of this type identified within the building. In the north-east corner of the building a shallow pit 252105 was overlain by the main fills of the building but might have been cut from its base rather than being an earlier feature. The pit contained middle Roman pottery, animal bone and shell and small amounts of fired clay and iron objects, comparable to other finds from within the sunken-featured building. The poorly preserved burial of a neonate, in a very shallow grave (252101), was cut into the fill of pit 252105.

The backfill of the structure contained a large artefactual assemblage, including pottery dating it to the middle Roman period (or perhaps a little later), large amounts of animal bone and shell, CBM and fired clay (presumably

Pl 4.20 Detail of oven 193070 in sunken-featured building 249085 (Zone 20; view from north-west)

from the superstructure) and many iron objects such as nails and rod, bar and strip fragments. There was very little slag recovered, but the identification of a small quantity of hammerscale suggests that smithing was undertaken nearby, and perhaps within the structure. Several quern stone fragments and one complete example were also recovered, most reused in 'wall' 134094, attesting to domestic cereal processing probably nearby.

Grave catalogue
Grave 252101 (Burial 252103)
Not illus
Grave: ESE–WNW, 0.45 x 0.35m, 0.05m deep.
Human Remains: Burial supine and extended, *c* 65% skeletal recovery, neonate *c* birth–2 wk.

Adjacent to the south-east side of the sunken-featured building were quite extensive layers of levelling and compacted chalk surfaces (including 215206, 215207, 215218 and 215228, Fig 4.114) which are likely to have been related to the use of the structure, perhaps as working surfaces. At the south-east margin of the chalk surfaces a deep pit (250071) cut through the roadside gully 249267. It was sub-rectangular in shape, had vertical straight sides cut through the chalk and measured 1.42m long, 0.8m wide and 1.05m deep. It was not bottomed, but its upper nine fills contained material typical of domestic rubbish including pottery dating the fills to the Roman period and small amounts of animal bone and shell, occasional fragments of fired clay, iron objects, slag and stone. The relatively small quantity of material (notably animal bone) recovered in relation to the depth of the feature may suggest that rubbish disposal was not its primary function, and it may have been a cess pit, into which domestic waste was periodically thrown.

The trackway and settlement features to the east of it were cut by a ditch (257050) on a NE–SW alignment, which turned to the north-west at its south-western end (Fig 4.113). This ditch may have formed part of an enclosure. It was similar in form to U-shaped enclosure 249051, further to the west (see below), and the two may have been related, perhaps representing a phase of reorganisation in the landscape

On the south-western side of trackway 249061 and west of shallow ring-ditch 249060 was a large feature, possibly a chalk quarry pit (217056), sub-oval in shape with an irregular profile (measuring 17m long, 11m wide and 0.6m deep). A small amount of Roman pottery and animal bone was recovered.

Some 120m to the west of the main group of features in Zone 20 (Fig 4.97) the western edge of this focus of Roman activity was marked by a ditched enclosure (249051, see below) and a number of closely associated features, most of which were broadly of middle Roman date (Fig 4.116). These features included a small sunken-featured building (228059) which predated the enclosure but shared the same general alignment. The sunken-featured building was oval in shape and measured at least 3.50m north-south, 2.35m east-west and was 0.55–0.60m deep (Fig 4.117; Pl 4.21). No associated postholes were found. In the northern part of the structure was an oven (228060). The oven was circular with a wide opening to the south and was constructed of clay with chalk fragments. The internal diameter was 0.92m. The internal area was heat-scorched and the area around the oven contained large amounts of ash and

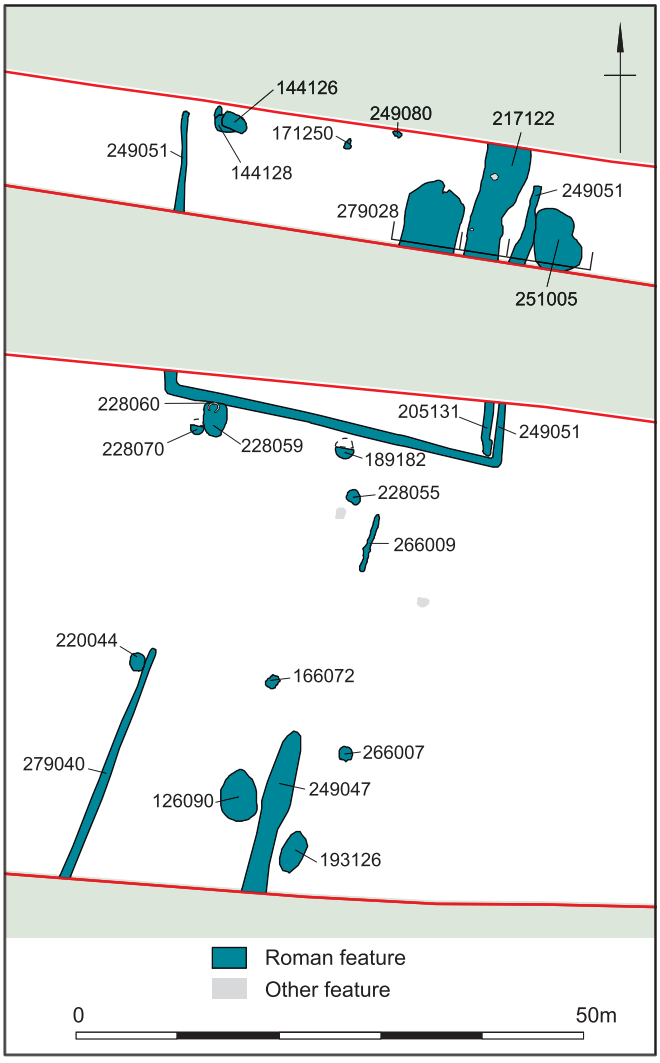


Fig 4.116 Plan of features at the western end of Zone 20

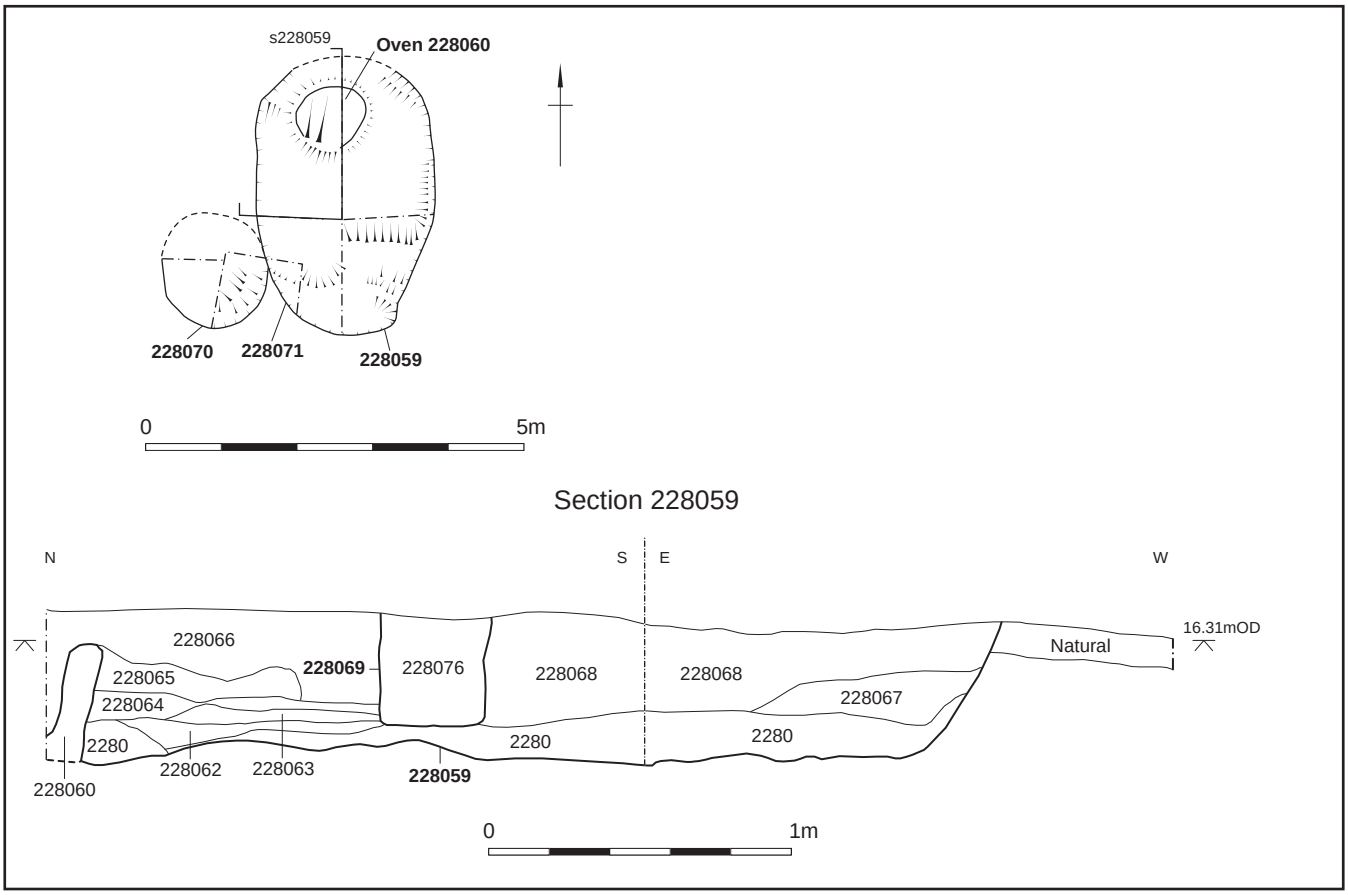


Fig 4.117 Plan and section of sunken-featured building 228059 (Zone 20)

charcoal. The backfill of the SFB and oven contained a pottery assemblage dating to the middle Roman period, suggesting that the structure was contemporary with the other sunken-featured buildings to the east. Other material included a small amount of animal bone, CBM and a few iron objects such as nails and an almost complete leatherworking knife (ON 3111, Vol 2, Fig 3.10, 7). A copper alloy object may have been a brooch pin or part of a hairpin or needle. The small size of this SFB, and its position away from the focus of settlement along with its large oven, may suggest that this was a small ancillary structure, possibly with an industrial function, but the finds recovered do not elucidate its function further.

Pl 4.21 Sunken-featured building 228059 (Zone 20; view from north)

A pit (228070) just to the west of the structure was also middle Roman in date, although only a small amount of pottery and a single iron strip was recovered from it. Two more middle Roman pits (189182 and 228055) were located a short distance to the east. Pit 228055 contained a large artefactual assemblage, mostly consisting of pottery, but also including small amounts of animal bone, a copper alloy pin and an iron strip. A distinct layer of oyster shells within this pit was indicative of a single episode of deposition.

Sub-rectangular enclosure 249051, which post-dated SFB 228059, was formed by a ditch measuring up to 1.20m wide and 0.5m deep. It enclosed an area 33m across from east to west and both ditch terminals in the north were clearly finished, suggesting that they may have formed the south side of opposed entrances. A short section of another north-south ditch (205131) was aligned with the interior of the eastern side of the enclosure and this double-ditched appearance seems to be confined to this small area. A moderate amount of pottery was recovered from the ditch (122 sherds) suggesting a middle Roman date for the use of the enclosure and the infilling of the ditch, although this is likely to be in the latter part of the period, as the earlier SFB 228059 was also used and infilled in the middle Roman period. Along with ditch 257050 to the east, this enclosure appears to represent a reorganisation of the immediate landscape subsequent to the structures going out of use.

The interior of the enclosure contained five pits and a ditch, although only one feature was demonstrated to

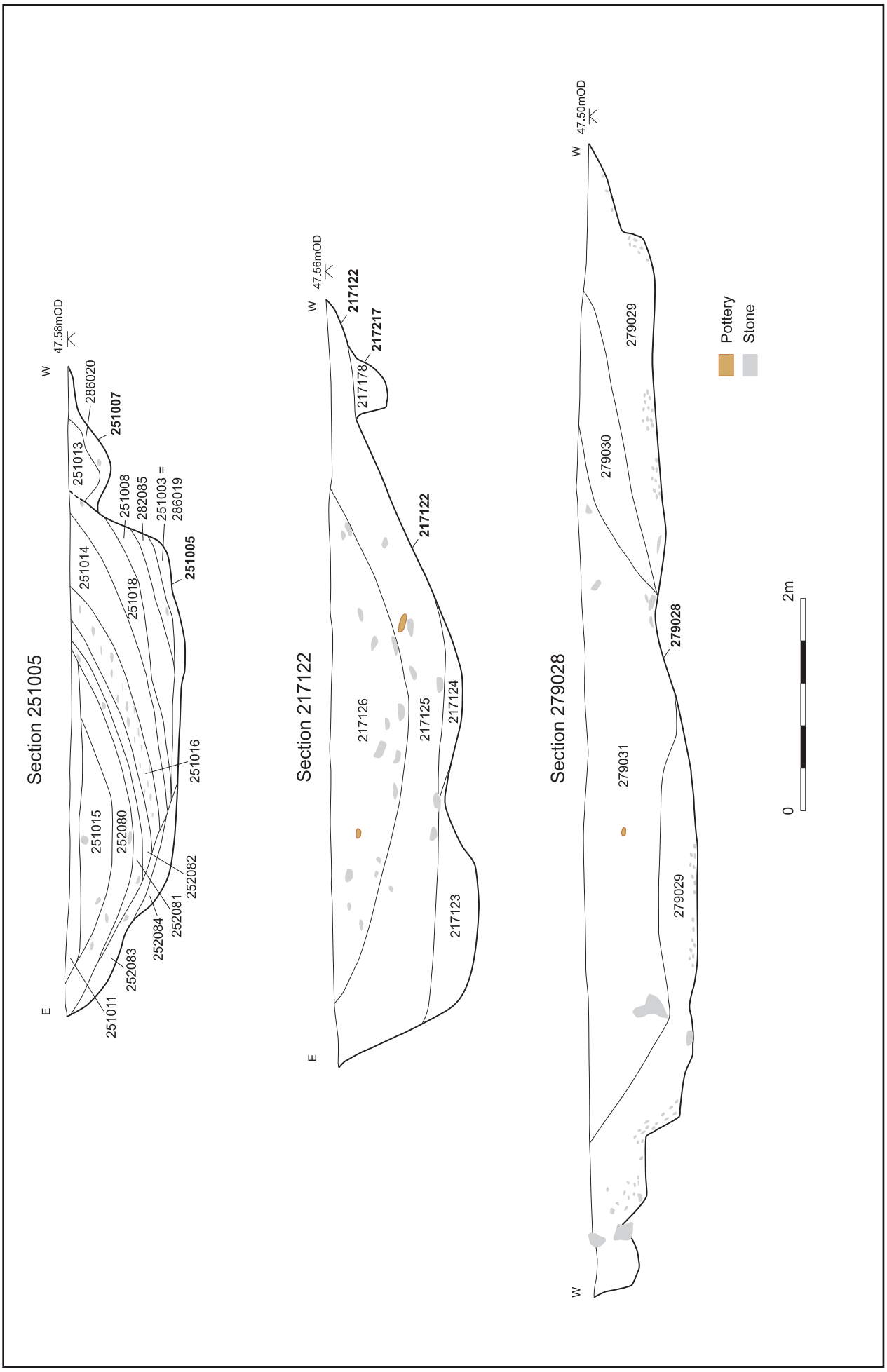
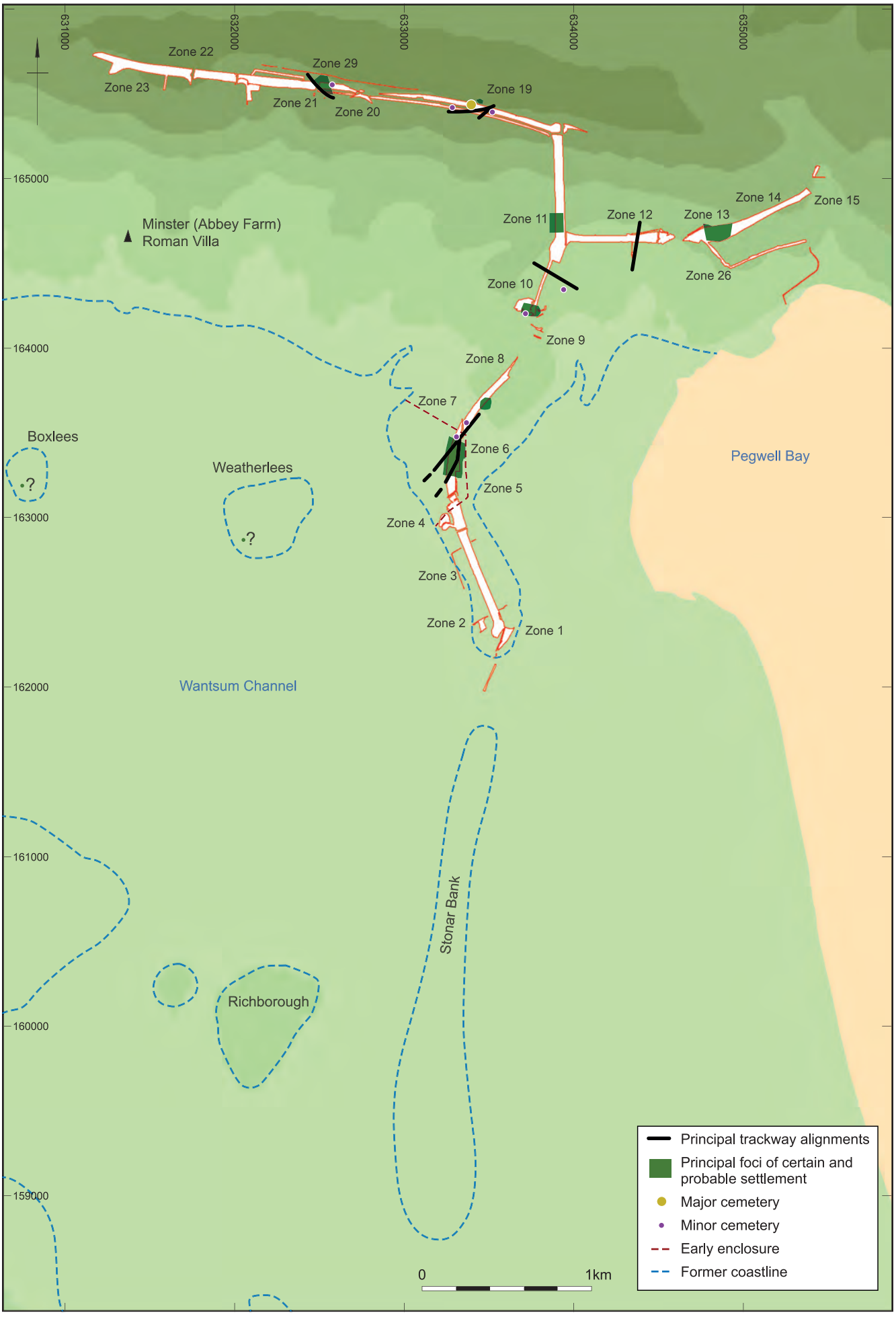


Fig 4.118 Sections of middle–late Roman features 217122, 251005 and 279028 (Zone 20)


631000
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Zone 12
Zone 13
Zone 14
Zone 15
Zone 26
Zone 10
Zone 9
Zone 8
Zone 7
Zone 6
Zone 5
Zone 4
Zone 3
Zone 2
Zone 1
Minster (Abbey Farm)
Roman Villa
Boxlees
Weatherlees
Pegwell Bay
Wantsum Channel
Stonar Bank
Richborough
Principal trackway alignments
Principal foci of certain and probable settlement
Major cemetery
Minor cemetery
Early enclosure
Former coastline
0
1km

be broadly contemporary with the enclosure by its artefactual assemblage. This was a large pit (279028), 4.6m wide and at least 7m long; its southern end lay beyond the limit of excavation so its full length was not known. The feature was up to 0.55m deep and had a slightly irregular profile (Fig 4.118, Section 279028), but it is nevertheless possible that this was another sunken-featured building. The fills of this feature contained a large quantity of middle Roman pottery, moderate amounts of animal bone and shell, CBM, iron nails and smaller amounts of fired clay, slag and worked stone, probably representing dumps of domestic rubbish. The other four pits (144128, 144126, 171250 and 249080) were broadly dated to the Roman period, but contained little else in their fills to suggest their function.

A large ditch (217122, Fig 4.118, Section 217122) extending from the north edge of the site appears to have terminated within the enclosure, although the terminal itself lay between two areas of excavation. The ditch was 3.62m wide and 0.7m deep and had a shallow and straight-sided western edge and a steep and straight eastern edge. It was aligned parallel with the eastern side of the enclosure and lay between this and the possible sunken-featured building 279028. Ditch 217122 would have blocked an entrance in the east side of the enclosure, and it is possible that ditch 217122 was dug after the enclosure went out of use. Pottery sherds from the ditch fill date its infilling to the late Roman period, which supports this suggestion. Part of a fallow deer antler from the ditch was radiocarbon dated to cal AD 1–220 (1915±35BP, SUERC-40739) which, though it does not really assist in the dating of the ditch, does confirm a Roman date for the introduction of fallow deer. Another large pit (251005, Fig 4.118, Section 251005) was situated just to the east of the enclosure. It was broadly oval in shape, and measured 6m long, 5m wide and 1.08m deep and contained a large quantity of finds in its 14 fills, indicating the dumping of domestic rubbish. This material included a large amount of pottery, most of which was middle or late Roman in date, large amounts of animal bone and shell, fired clay, CBM, iron objects (mostly nails, but including a reaping hook (ON 856) and an iron collar or binding (ON 847)) and a possible silver coin.

South of enclosure 249051 lengths of ditch and gully of Roman date may have represented a routeway leading in its direction. The eastern ditch (249047) was substantial, measuring 3m in width and 0.8m in depth in comparison to the 0.8m width and 0.14m depth of the western ditch (279040). The ditches may have defined a routeway 15m wide, although this would have been unusually wide for such a feature, and they may simply have been field boundaries, and possibly not even contemporary.

Situated near to the ditches were five possible rubbish pits (220044, 166072,126090, 266007 and 193126). All contained fills with various amounts of pottery, animal bone and shell, fired clay, and small metal objects/ fragments (mostly nails, but including an iron rake tine from pit 126090). Pottery dates suggest that these features were all contemporary with the middle Roman settlement activity.

Zones 21–24

Only a very small number of features at the western end of the route were of possible Roman date (see Fig 4.119 for location of Zones). At the entrance to the Iron Age horseshoe-shaped enclosure in Zone 22 (see Fig 3.60) were two pits (290181 and 198269) that may be Roman, although this is based on the inclusion of distinct oyster shell deposits in the fills, as no pottery was recovered from either feature to confirm this, and they may instead be of medieval date and related to the probable medieval ditches to the south and east (see Chap 6). Modest quantities of Late Iron Age and Roman pottery were recovered from Zones 21 and 22, but almost none was associated with features that might be attributed to these periods.

The southern side of barrow 193123 in Zone 23 was cut by a sequence of three pits (290305, 290306 and 290449, see Fig 2.21). The latest pit in the sequence (290305) was large, sub-rectangular in shape and measured 4.4m in length, 3.5m in width and 1.3m in depth. It was the only one to contain dating evidence, including 296 sherds of a single everted rim jar of Late Iron Age to early Roman date, and three other sherds more broadly dated to the Roman period. Other material from the pit included a small amount of animal bone and a relatively large quantity of residual prehistoric worked flint. The function of pit 290305 is unclear, but it is possible that it may be another example of a sunken-featured building, and in any case is most likely to have been associated with the nearby Iron Age and Roman settlement at Tothill Street services (Gollop and Mason 2006) to the west of Zone 23. Such settlement-related activity would explain the scatter of Late Iron Age and Roman pottery in Zones 21 and 22 and also in the upper fills of the Early Bronze Age ring-ditches in Zone 23.

Landscape and landuse *by Paul Booth*

While the basic topography of Thanet in the Roman period was little changed from the later prehistoric picture it is important to understand as far as possible the nature of the Wantsum Channel at this time. This is, however, a complex issue which has received less detailed attention than that devoted to the development of Romney Marsh, for example, and there is no archaeological consensus about the interpretation of the existing geomorphological evidence. For example, the width of the southern mouth of the channel is estimated by Perkins (2007, 251) to have been about 3000m across in the middle of the 1st century BC, while Moody

Fig 4.119 (opposite) Plan of Roman trackways, settlements and cemeteries along the EKA2 route, set against local topography

(2008, 49) takes the view, on the basis of a more detailed discussion, that 'the Wantsum was never a very wide channel'. Significant factors will have been the extent of both the Stonar Bank and the shingle and sand spits extending northward from Deal. In any case, the configuration of both of these will have changed in the course of the Roman period, although it seems clear that at the very least Richborough remained a viable port throughout the period; recent work suggests that the shore line there lay immediately below the fort rather than at some distance from it (Wilmott 2011, 25). A few Roman features in EKA2 Zone 1 suggest that in that period the Ebbsfleet peninsula extended at least that far (but probably not much further) south, to a point close to the present 5m aOD contour line and within 400–500m of the modern course of the Stour to both south-west and south-east, and about 2km NNE of the Richborough island. It is almost certain that at this point the projection was genuinely a peninsula with the Wantsum Channel/sea to the west, south and east. The beaches presumably provided locations where boats could be drawn up, as discussed by Fitzpatrick (see Chap 3), and the sweep of the former shoreline of Pegwell Bay between the Ebbsfleet peninsula and Cliffs End is an area where Roman finds have been made. The extent of the Stonar Bank remains problematic. The feature is shown (unlabelled) on some reconstructions as a southerly extension of the Ebbsfleet peninsula in the direction of Richborough island, for example by Young (2004, 4–5) and by Moody (2008, 51, fig 19), but it is considered by Perkins (2007, 249–51) not to have extended this far north.

Landuse and vegetation: the agricultural economy

Understanding of the nature of landuse is mostly based on evidence gathered primarily to elucidate the agricultural economy. Animal bone is an indirect indicator of aspects of this use, while charred plant remains are more directly related, but are usually only representative of part of the range of vegetation prevalent in the locality of the sampled sites and of aspects of it which were preferentially selected for exploitation. A little additional evidence comes from snails, based (for this period) on assessment rather than fully analysed data (Stafford, Vol 2, Chap 19). Samples from Zones 11, 14 and 19 were examined: ie, one each from Landscapes 1, 2 and 3, but the numbers of snails from ditches in Zones 11 (on Sevenscore) and 14 (Cliffsend spur) were very small and typically mixed, providing no clear environmental signal. The larger samples from Zone 19 (Thorne Hill, on the chalk ridge) came from the fill of a possible sunken-featured building (217091), and mostly indicate open grassland, perhaps with some areas of bare earth, which seems entirely consistent with the settlement context and potentially, but not demonstrably, with the wider setting of this landscape area.

Charcoal evidence, relatively limited in extent, also came from sunken-featured buildings, of middle and late Roman date, two in Zone 20 (249081 and 249085) and one in Zone 6 (170132). These samples were fairly consistently dominated by material from blackthorn-type species, including wild cherry. This may indicate deliberate selection, but it is perhaps as likely that it suggests limited availability of other woody taxa during this period. Similar domination is seen in the fill of oven 289055, also in sunken-featured building 170132, but this sample also contained some charcoal of oak and ash. Such material was clearly available, although perhaps less readily, and was perhaps singled out for special requirements such as cremation burial, as seen in earlier periods. In general, an absence of extensive woodland resources is clearly implied, which is of course consistent with the situation already established in the Iron Age if not earlier.

Assessment of the division of landscape use between arable and pastoral agriculture is not easy. The greater frequency of charred plant remains of Roman date compared to earlier periods may reflect an increase in the volume of cereal production, but might also be indicative of changing practices related to the disposal of crop-processing waste, in particular the use of chaff as fuel in kilns and ovens. Hulled wheats were the principal cereal crops; spelt was dominant but emmer, more common previously, was still present. Hulled barley, oat, peas, beans and flax were all grown, but the pulses and flax were probably under-represented in the assemblage (see Hunter, below), as they are less likely to have come into contact with fire during processing than were the cereals. The evidence of the weed seed assemblages suggests that cultivation was predominantly of lighter soils, but this would apply to much of the area traversed by the EKA2. Weeds characteristic of heavier soils were also present, however, so exploitation of areas across the local landscape for a variety of crops seems likely, although in relation to Zone 6, for example, it may be noted that more recently Ebbsfleet Farm was considered 'time out of mind' to have been associated with orchards and pasture, only coming under the plough in the 1950s (Perkins 1992a, 270).

Artefactual material includes examples of a number of agricultural implements (see also Scott, Vol 2, Chap 3), of which the most notable, unfortunately both poorly-stratified in Zone 6, are a scythe, typologically of Late Iron Age or early Roman date, and a complete plough share. The latter is again typologically probably Iron Age rather than Roman in date. A further probable share fragment came from an early Roman ditch in Zone 6, and other agricultural or horticultural tools from the same zone included two or three iron spuds, blade fragments from two further scythes, three (or perhaps four) reaping hooks and a rake tine. These hint at the importance of agriculture in the economy of this settlement. In addition, the presence of two millstones here (plus one in the adjacent Zone 7) suggests relatively intensive crop processing activity and, by implication, a significant level of production, but the original context of use of these stones is unfortunately not clear (see further below). In Zone 20, one complete and several large fragments of quern stones came from sunken-featured building 249085, reused in the structure but likely to be indicative of crop processing in the vicinity.

There was little other evidence, either here or elsewhere within the project area, for the larger scale infrastructure of arable production, such as 'corn drying' ovens of the type seen, for example, at the villa at Minster, one (building 2) adjacent to the villa enclosure boundary wall (Parfitt *et al* 2009, 348–9) and another within the enclosure, in this case most probably post-dating the main phase of use of the villa, and incorporated within a timber structure (Moody 2010). A series of less substantial kilns or ovens, some apparently associated with crop processing, were closely spaced within a cellar-like structure, again suggesting a probable villa context, at Broadstairs (Moody 2007, 203–207).

At EKA2 the one exception to the general absence of agricultural buildings is the occasional occurrence of four-post structures, traditionally interpreted as granaries. Three such structures (319054, 170157 and 262165) were located within the Zone 6 settlement, in Late Iron Age/early Roman, early Roman and middle Roman phases respectively. All these structures were approximately 3m square in plan, and all were placed within ditched enclosures alongside other features. The significance of a short gully within the area defined by the postholes of structure 262165 is uncertain, but overall the setting of these structures supports the standard interpretation of their function, albeit that there is no associated material that provides more direct confirmation. While typically Iron Age, structures of this sort are encountered widely within the region on sites of Late Iron Age–early Roman date, where they are usually either the most common or even the only structures identified (eg, Booth 2011a, 270–272; also Philp *et al* 1991, 13, 25–29; Booth and Howard-Davis 2003, 5–6, 11; House 2005, 1). Later examples are less common. On Thanet, one six-post structure at Monkton, and a further possible post and slot structure at that site, only partly excavated, may have been granaries, but of slightly more developed form than the Zone 6 examples, and broadly of middle Roman date, both being closely associated with sunken-featured buildings (Bennett *et al* 2008). Both roadside settlement context and chronological trends may have encouraged the use of larger buildings there. In this context two further EKA2 structures should be mentioned: 195120 and 267045, both in Zone 19, were eight-post structures, respectively 4 x 1.5m and 5 x 3m in size. These have been assigned to the Late Iron Age on very slender ceramic evidence, and the possibility that they might have been of later date should be borne in mind; in any case a functional relationship to the four-post structures is possible.

Evidence for the pastoral aspect of the agricultural regime of the EKA2 sites rests almost entirely with the animal remains. Many of the cut features may have been dug in response to the specific requirements of pastoralism; ditches for enclosures of various kinds, for the purposes of defining droveways and ensuring separation of animals from areas of arable, and waterholes to provide a supply of water, particularly for cattle, but the form of the features themselves does not allow interpretation exclusively in terms of these functions. The animal bone evidence itself is of moderate quality; approximately 11,400 bone fragments were recorded from contexts of Late Iron Age to late Roman date, but 30% of these were unidentifiable and in total only just under half could be assigned to species. The broad trends suggested, based on data from Zone 20 (Landscape 1), Zones 13 and 14 (Landscape 2) and Zone 6 (Landscape 3) are outlined below (see Strid).

There was interesting spatial and temporal variation in the representation of cattle and sheep/goat (presumably mostly sheep; specifically-identified goat bones comprised three horn cores from male goats, one unsexed horn core and one skull with the horn cores chopped off from the ?early Roman Landscape 2 assemblage, and two fragments in middle Roman contexts in Zone 6). Overall, representation of cattle and sheep/goat in the Late Iron Age to middle Roman phases of EKA2 is broadly similar, but the pottery evidence from Landscape 2 suggests that most of the Roman activity there was of early Roman date and if the more broadly-phased animal bones are assigned accordingly it is clear that in this area, at least, sheep/goat were significantly more numerous than cattle, but that there is effectively no evidence for trends after the early Roman period. Elsewhere, cattle seem to have been more numerous in the late Roman period, but sheep/goat continued to be well-represented. There is a notable contrast with the picture at nearby Monkton, where sheep/goat was significantly more common than cattle (eg, Bendrey 2008, 234), although it is possible that this picture is skewed by the proximity of structures and the absence of features such as ditches often used for peripheral dumping including remains of larger animals (*ibid,* 257; Wilson 1996). Increase in the relative importance of cattle in the later Roman period is a more widely observed pattern (eg, King 1999, 180) although the reasons for it may have been varied and complex (eg, Hesse 2011). It is seen for example at Springhead, where the trend was already under way in the middle Roman period (Worley 2011a, 32). Cattle were dominant in the late Roman assemblage from Ickham (Palmer and Powell 2010, 311), in all phases of the villa at Northfleet (Worley 2011b, 43), and in the smaller assemblage from Thanet Earth (Jones in prep).

The two principal domestic taxa were supplemented by pigs, which were significantly better represented in the middle and late Roman phase groups than earlier, and by equids – probably horse (no other equid species were positively identified in the Roman assemblage). In Late Iron Age and early Roman Zone 14 and in middle and late Roman Zone 20 horse bones were more numerous than those of pig, and only in the middle Roman phase at Zone 6 was this reversed. The overall frequency of horse was just over 5% (by NISP) of identifiable bone from the three zones in question. At Monkton horse was also the third most common animal after sheep/goat and cattle, but was more frequent overall, amounting to 12% of identifiable bones (NISP). There it was concluded that horse meat probably formed part of the diet of the inhabitants of the settlement (Bendrey 2008, 260). Cut marks on some of the horse bones from EKA2, however, may represent skinning rather than butchery related to meat consumption.

Further supplementation of the meat diet is suggested by bones from red deer, roe deer, goose, duck, wader and possibly also fallow deer, albeit in very small quantities. The fallow deer remains add to the small body of evidence for the presence of this species in Britain in the Roman period, previously indicated locally at Monkton (Bendrey 2008, 254, 261–2). Two fallow deer metatarsals came from middle Roman pit 227018 and late Roman sunken-featured building 249083 and an antler (radiocarbon dated to cal AD 1–220) from ditch 249071, all in Zone 20 on the chalk ridge, the part of EKA2 closest to Monkton. This may suggest the presence of a high-status villa in the vicinity (*cf* Bendrey 2008, 261–262) on the basis that fallow deer, presumably rare imports from the Continent during the Roman period, were held in enclosures near villas (Sykes *et al* 2006). If this was the case the villa at Minster could perhaps have been the site in question (eg, Parfitt *et al* 2009), although the depiction of a (roe?) deer on wall painting from that site (Moody 2008, 151, fig 91) may be no more than a happy coincidence.

Remains of goose and duck (probably not domesticated in Britain until the post-Roman period; Albarella 2005) and wading birds and gannet, if eaten, suggest the exploitation of water's edge resources. This is also indicated by occasional bones of whale-sized and dolphin-sized cetacean, perhaps derived from beached animals. Other marine resources included a variety of fish and shellfish, amongst which mussels as well as oysters were well-represented. A reasonable variety of fish remains was present (see Nicholson, below) but the total quantities recovered were small and appear consistent with a general picture of low levels of consumption of fish in Roman Britain (Locker 2007). Overall, therefore, exploitation of coastal and marshland areas, at least with regard to animal resources, appears to have been on a relatively limited scale.

Settlement and structures

There can be little doubt that the whole of the landscape traversed by the EKA2 route was fully exploited in various ways during the Roman period, but identification and (particularly) characterisation of specific settlement foci within the landscape, with a few obvious exceptions, is less straightforward. This is inevitable given the linear character of the project, which means that settlement foci lying just outside the road transect might be detected on the basis of adjacent concentrations of features and finds, but equally might not; in any case the significance of such concentrations may be uncertain in the absence of diagnostic settlement indicators such as structures. A related problem is the issue of the visibility of structures. Sunken-featured buildings (see further below) are the most recognisable, and potentially dominant, structural form in the area, but factors such as truncation by ploughing might well have removed less robust evidence for other structural types.

Scattered features along the Ebbsfleet peninsula probably reflect activity related to the longest lasting and apparently largest focus of settlement, in Zone 6 (Pl 4.22). This can be characterised in broad terms as a minor nucleated settlement, with a series of domestic settlement units, mostly located within enclosures of irregular plan and defined by ditches of varying size, based around minor trackways. Further enclosures did not contain structural evidence within the excavated transect, and some of these may have been yards, paddocks or enclosures for agricultural or other uses, having no integral domestic unit. Indeed the number of confidently-identified structures, all sunken-featured buildings, in the middle and late Roman periods, two and three respectively, falls far short of the potential number of enclosures identified within the excavated area, which, allowing for uncertainties of interpretation, could have been as many 10 or even 12. No structures

Pl 4.22 Overview of Romano-British settlement in Zone 6 (view from north-west)

in Zone 6 were confidently assigned specifically to the early Roman period, as opposed to the broader Late Iron Age–early Roman period, when all the structures in question were circular. The identification of early Roman feature 170175 as a sunken-featured building is very tenuous and is not followed here (see Table 4.2). Like a number of other large subcircular features interpreted as pits, it was positioned right in the corner of the enclosure with which it was associated. The absence of early Roman structures is strange since a reasonable number of enclosures, some quite well-defined, are assigned to this period. It is unclear if this absence indicates a particular type of mainly non-domestic use of part of Zone 6 at this time, or if it suggests the use of an alternative structural type in this relatively brief period. The maximum north–south extent of settlement may have been as much as 400m in the phases of most intensive occupation (in the Late Iron Age–early Roman and early Roman periods); the east-west extent is of course unknown. By the late Roman period occupation features were altogether more sparsely distributed, although the number of potential domestic units, as represented by sunken-featured buildings, was not at all reduced by comparison with the middle Roman period (see above). The principal difference between these periods here seems to have related to ditches, though whether the scale of ditch digging was significantly reduced or whether the distribution of late Roman material was such as to render contemporary features less readily identifiable, is unknown.

Taking the Late Iron Age–early Roman major ditch complex at the junction of Zones 6 and 7 as the northern boundary of the nucleated settlement, the next significant location of occupation is only 250m distant in Zone 7 on the north-east side of a long-lived sequence of trackways. The settlement form here appears to have been rather different, consisting perhaps of a single relatively substantial sub-rectangular enclosure (a large part of which lay outside the excavated area to the east), probably originating in the Late Iron Age, within which a roundhouse was dated to the Late Iron Age–early Roman period. The enclosure was cut and therefore put out of use by early Roman ditches. It is possible, but perhaps not very likely, that the roundhouse survived in use at this time; although contemporary features could have lain to the south-east outside the excavated area there is no indication of continuing occupation here after the early Roman period at the latest.

Settlement at the south end of Zone 10 seems to have taken a more complex form. The principal alignment of features followed a broadly WNW–ESE trend, observed widely in Zone 10 and to an extent also in Zones 7 and 8 to the south. Linear boundaries, trackways and enclosures all followed this alignment with varying degrees of precision, generally reflecting the topography, with the ground sloping up to the north on Sevenscore and further to the south to Cottington Hill. Here again the chronological emphasis was on the Late Iron Age–early Roman and early Roman periods, at least as far as obvious settlement-related features are concerned. The most clearly defined element was a subdivided rectilinear enclosure attached to the south side of a boundary ditch (249186/42110/194085) crossing the northern part of the area. Within the enclosure were a sunken-featured building (249233; Pl 4.23) and a four-post granary and it is possible that there were originally further structures and other features within it which did not survive. To the south a complex sequence of ditches probably defined successive trackways and one of the shallow elongated enclosures on their south side contained a small long-lived cemetery. Further south again may have lain yet more rather irregular enclosures. Whether or not this was the case, features in this area included another sunken-featured building (249199). Like 249233 to the north, this was small and of early Roman date. Whether either of these was a domestic structure is uncertain, but whatever their functions the configuration of enclosures and trackways strongly indicates that they must have belonged to different domestic/agricultural units.

Concentrations of Roman features were observed in Zone 11 but most, along with broadly associated linear features in Zone 12, seem to have related to small enclosures probably of agricultural nature, with pits occasionally incorporated. Almost all of these features are assigned to the early Roman period, although quantities of associated material are, unsurprisingly, modest. Less clear is the significance of the remarkable sequence of north-south ditches located at the western margin of Zone 11. These are even less clearly dated, containing very little material and being assigned only a broad Roman range. They might represent the east side of a long-lived sequence of enclosures lying to the west, or ditches associated with an evolving north-south trackway, but neither interpretation is certain. Just east

Pl 4.23 Sunken-featured building 249233 (Zone 10; view from east)

of these ditches, and partly overlying an infilled palaeochannel, was a little group of features including a small partial enclosure (its west side perhaps formed by a component of the major north–south ditch complex) with a waterhole, and to the north a multi-post structure (190431) and a few further pits, all dated to the middle Roman period by fairly small groups of pottery. The latter may be sufficient to suggest contemporary occupation in the vicinity, but structure 190431 seems likely to have been a granary and overall this small group of features appears clearly agricultural rather than domestic in character.

Zone 12, an area of intensive Middle and later Iron Age activity, saw at most small-scale Late Iron Age and early Roman ditch digging, possibly associated with continued use of the north-south trackway here, but the nearest settlement features were in Zone 13, where the quantities of early Roman pottery recovered (see Table 4.1) suggest domestic activity. Here the Early Iron Age trapezoidal enclosure (134099) was partly redefined, at least in vestigial form, by Late Iron Age–early Roman gullies (134101) and was still clearly a significant feature in the local landscape. Within the enclosure were a few Roman pits, including one very large shallow feature, and a small building (191125), the latter placed almost centrally, while immediately outside the original (and probably still functioning) entrance to the enclosure was a second rather larger sunken-featured building (193140). North-east of the latter occasional pits, including the latest of a sequence of quarry pits, were dated to the early Roman period, as were both the sunken-featured buildings. Whether both of these were domestic structures is uncertain; 191125 contained very few finds, but 193410 produced a very large mixed assemblage. This is indicative of dumping of domestic rubbish after the structure had fallen out of use, but this rubbish must have derived from somewhere close by. It is unfortunate that the structure lay very close to the edge of the excavation and nothing can be said about other possible features and structures located immediately adjacent to the south. In the absence of such evidence assessment of the settlement layout is also difficult; it is unclear how enclosure 134099 was being used – was it the focus of activity in this period or did it perform an ancillary role, for example serving mainly as a stock enclosure? Was the focus of this settlement in fact to the south, beyond the limits of excavation?

The evidence for settlement in Zone 19 raises rather similar questions. The key potential settlement features lay between two trackways/hollow-ways aligned ENE–WSW (one with an east-west spur). Loosely related to these was a further ditch or gully (126172) running more nearly east-west. At the northern margin of the zone the gully was cut by a small rectangular enclosure (249029) which perhaps had a northern side outside the excavated area. The enclosure ditch is assigned to the early Roman period as are two possible sunken-featured buildings, one (126117) within the enclosure and the second (217091) cut right across the western arm of the enclosure ditch. In the former case the sequential relationship between enclosure and structure is uncertain. The enclosure was on the same alignment as and was surrounded (particularly to the east and the south) by burials. One cremation burial (153068) in a casket was more or less centrally placed within the enclosure and it is possible that the primary association of the enclosure ditch was with this feature rather than with the sunken-featured buildings. Nevertheless, it seems certain that the latter are likely to have seen use contemporary with the placement of some of the burials in the vicinity. Other settlement-related features are effectively absent in this area. A few early Roman pits were located south of the enclosure but are at least as likely to have been associated with the cemetery activities. Sunken-featured building 126117 was quite small and it is difficult to see it as a domestic structure in its own right. Finds from both sunken-featured buildings consisted almost entirely of moderate quantities of early Roman (and some residual earlier) pottery. Their significance as settlement features is therefore rather uncertain, but it is possible that they formed a contemporary unit with complementary functions. The settlement in Zone 19 may have been somewhat peripheral to the main route in this period, which probably ran along the highest point of the chalk ridge, to the north beneath Manston airport, where Roman finds and sites suggest a greater intensity of domestic occupation.

Some 700m west of these features was a better defined cluster of settlement activity including six sunken-featured buildings and related features spanning the middle and late Roman periods. Most if not all of these elements were clearly related to a trackway. Although ditched enclosures formed part of the overall complex they did not provide a consistent layout within which other features were set. The identified structural features fall into three groups, the most easterly of which, apparently located outside to the west of two ditched enclosures fronting onto the trackway, comprised three or four sunken-featured buildings and two associated pits (for the issues of definition see further below) set back some way from the trackway edge. Three of these structures were of middle Roman date, two small and one large. The latter, and one of the smaller structures, was relatively regularly rectangular in plan. The fourth structure (249083, of late Roman date and relatively irregular form, was the largest of the EKA2 buildings of this type in terms of the surface area of the pit. West of this complex another large sunken-featured building, 249085, fronted onto the north-east side of the trackway and was cut through the fills of part of a complex of quarry pits. Further west again, and well to the south of the projected SE–NW alignment of the trackway, the southern part of a north-south aligned enclosure was observed. A small sunken-featured building adjacent to its southern end was earlier than the enclosure, while a large sub-rectangular example, only partly exposed, lay within it. Other features associated with this complex included a relatively small number of pits and linear features. Most of these features, including both the structures, were of middle Roman date.

The extent to which any of these settlement components can be seen together is uncertain. The

western enclosure complex, for example, lay almost 100m west of the roadside structure 249085, apparently with relatively few features in between. Nevertheless it may be most likely that all these features were part of a single settlement extending almost 250m from east to west, but the extent to which there were genuine gaps in the settlement layout is difficult to judge because some of these areas were inaccessible for excavation. The overall form of this middle and late Roman settlement was therefore perhaps not radically different from that of the contemporary settlement in Zone 6.

In wider terms, an important question relates to the stability of settlement form. In discussing the Monkton settlement, consisting almost entirely of sunken-floored structures (SFS in the usage of that site), Alison Hicks (2008, 273) suggested that 'the concept of site-wide sub-phases can perhaps be dismissed as not applicable to the settlement at Monkton.' Instead a more fluid sequence of site development was preferred, with the emphasis on the evolution of individual structures rather than on settlement-wide development (*ibid,* 273). Adoption of this approach seems to have been in part a consequence of the relative absence of boundary features (it is striking that most of the Monkton SFSs lay outside the relatively few enclosures present) which might have allowed the identification of a settlement framework within which the development of adjacent sequences could be traced more easily. The very lack of such a framework, however, can be argued to support Hicks' interpretation. A rather similar pattern of development can therefore be suggested for the settlement areas in Zones 19 and 20, where again there is relatively little evidence of a framework of enclosures to which individual structures or groups of structures were related. This pattern contrasts markedly with that at roadside/nucleated sites such as Hersden (Barrett 2004; 2006; Bennett 2010, 337) and further afield at Westhawk Farm, Ashford, where the definition of property plots with ditches was a key characteristic of the settlement plan (Booth *et al* 2008, 367–9). Moreover, the most striking arrangement of such plots within the excavated part of the site was assigned to the mid- to late 2nd century (*ibid*, 46–7), precisely contemporary with the main period of use of the Monkton and EKA2 Zone 19/20 settlements. The latter seem most likely to have developed in a similar way to that envisaged for the Monkton settlement, with a degree of drift across the areas involved rather than continued use of the same or immediately adjacent occupation locations for successive buildings. The gap between the main clusters of sunken-featured buildings at Monkton and Zone 19/20 was about 2.2km.

The situation in Zone 6 seems to have been rather different. Here there was a longer sequence of settlement with significant pre-Roman elements of a type absent in Zones 19 and 20. There was much more intensive definition of enclosures and minor trackways using ditches, and apparently therefore greater stability of overall settlement location as far as can be judged from the relatively narrow transect of the road scheme. In detail, however, the site layout was far from static and in the course of the Roman period underwent substantial modification on several occasions. Nevertheless, the question of whether these represented periodic concerted reconfiguration of the settlement or a more fluid sequence of continual modification, raised at Monkton, is still relevant here, although the physical constraints of the site preclude a definitive answer.

A key question for Zone 6, again unfortunately not answerable with certainty, concerns the relationship of settlement there to structures identified immediately adjacent to the east and west in 1990 (Perkins 1992a) and to the south in 1992 (Hearne *et al* 1995). In both locations examined in 1990 poorly-preserved foundations of a rectilinear structure were found. In Site 9a, just east of Ebbsfleet Lane and lying within the area enclosed by the early Roman defensive ditch (but perhaps not its Late Iron Age predecessor), these were of two phases, the first of limestone associated with a mortar floor, and the second of water-rolled flints, the axes being aligned NNW–SSE and ENE–WSW (Perkins 1992a, 278). In Site 9b, some 60m west of Ebbsfleet Lane, foundations on a similar alignment were of rammed chalk and a few water-worn flint boulders, again associated with a degraded mortar floor (*ibid*, 280). The Site 9a structure was dated to the later 2nd century (*ibid*, 281) while Roman material associated with Site 9b was mainly of 2nd–4th century date (*ibid*, 280). The structure examined in evaluation in 1992 lay to the north-east of the north-east corner of EKA2 Zone 4, only 20m east of one area of the Weatherlees-Margate-Broadstairs pipeline excavations of 2004 and 2005 (see Egging Dinwiddy and Schuster 2009, 107, fig 2.19). Foundations, of two east-west walls some 3.5m apart, were again formed of water-worn flint nodules and dating was poor (Hearne *et al* 1995, 254–5). As with the 1990 Site 9a structure, this building lay just inside the line of the sequence of defensive ditches enclosing the head of the Ebbsfleet peninsula, in this case just north of its southern arm. In no case is the size or character of the structure clear. These buildings must have been contemporary with some of the sunken-featured buildings in Zone 6. It is possible that further rectilinear buildings of this type were originally present, but had not survived the intensive agricultural activity which was already noted as having caused significant damage to the features examined in 1990 (Perkins 1992a, 275, 278, 280). However this may be, the rectilinear buildings should be seen as integral parts of the Zone 6 settlement rather than separate from it.

Structures: sunken-featured buildings

The principal later prehistoric structural type on EKA2 was a circular building defined by a ring gully. Whether the latter represented a wall trench or a drainage feature is not always clear, but the latter is generally assumed. Internal structural features (particularly postholes), if they were ever present, are mostly absent. The presence of at least eight structures of this type in Zone 6 is suggested by penannular gullies, and a further example

was found in Zone 7 to the north. The gullies vary in internal diameter (from 5.2m to 12.6m) and in completeness – some of the less complete (little more than semi-circular) gullies are not certainly associated with structures, although this seems likely. The variation in diameter suggests that not all were necessarily domestic buildings. These structures have been described in Chapter 3 above, but as they are assigned to the Late Iron Age–early Roman phase they are relevant here (structures assigned to Middle–Late Iron Age and Late Iron Age phases are not considered). The quantities of associated finds are rarely sufficient to provide close dating, however, and in any case derive mainly from the penannular gullies, so the extent to which they provide a reliable indication of the period of use of individual buildings is questionable. In Zone 6, of course, this is an important problem because it makes it very difficult to judge the scale of any possible hiatus in the occupation sequence that can be correlated with the reinstatement of the large defensive enclosure, apparently at about the middle of the 1st century AD. Nevertheless, on present evidence it seems unlikely that use of circular structures continued much if at all into the second half of the 1st century (see further below).

Elsewhere, for example at Westhawk Farm, which has one of the largest groups of circular buildings (perhaps 10) of Roman date from a single site in Kent, these were current throughout the life of the excavated part of the roadside settlement, from the early Roman period until about the middle of the 3rd century AD (Booth *et al* 2008). Like the Iron Age examples on EKA2 these were identified, entirely or in part, on the basis of the existence of gullies, most if not all of which are likely to have been for drainage around the structure rather than being wall trenches, with internal diameters ranging from 7m to 12m. In one case arcs of stakeholes survived at three points around the perimeter of the structure and suggested the position of the wall line of a building of *c* 10m diameter, with the wall set very close to the associated drainage gully. It is notable that the best evidence for circular buildings of early Roman date in the region therefore comes from the larger nucleated settlements, including Springhead (Andrews *et al* 2011, 39–41), though the significance of this remains unclear. There was extensive overlap in structural types between nucleated and other settlement forms, perhaps best illustrated at Springhead, where some of the timber structures are perhaps indicative of buildings which might have been expected to occur usually in rural settlement contexts.

In EKA2 Zone 6, by contrast, there was a distinct change in domestic architecture, from roundhouses defined by ring gullies in the Late Iron Age phase to sunken-featured structures. However, none of the latter was securely dated to the early Roman period. This apparent absence might be a consequence of the difficulties of the dating evidence associated with these structures (see below), but it might also reflect circumstances peculiar to Zone 6 – for example, the possibility that the settlement sequence was interrupted at the time of the Claudian conquest and that activity did not resume for some time, with the result that associated sunken-featured buildings contained pottery dated to the middle Roman period by the time they in turn were out of use and becoming backfilled. In broader terms, while there is evidence of occasional possible examples of sunken-featured buildings of pre-Roman date (see below), including the Zone 13 Middle Iron Age feature, perhaps suggesting a long ancestry, the Zone 6 evidence suggests a significant change in building fashion within the Roman period, but it is less clear if this took place over a relatively short period of time.

Sunken-featured buildings were the most commonly-represented Roman structures in EKA2; a minimum of 18 certain and probable examples were identified. These were therefore the dominant structural type in all the areas where settlement activity was located, and in some cases were the only type of structure identified in this period. In these respects the EKA2 examples mirror the evidence from nearby Monkton, the first British site on which structures of this type were identified in numbers and well excavated (in 1994–5) and published (Hicks 2008, 107–150, 273–277). This site is of fundamental importance to discussion of the EKA2 structures.

Buildings of sunken-featured or sunken-floored type were found in all three main landscape areas of EKA2, although in Landscape 2 (Cliffs End spur) both examples (in Zone 13) were of early Roman date, as were the two at the southern end of Zone 10. It is unfortunate, therefore, that some of these structures could not be completely excavated (due, in some cases, to the limits of excavation or the presence of services), which imposes limitations on their interpretation and the presentation of the basic data which relate to them. The complex sequence of development in Zone 6, in particular, was such that positive identification of sunken-featured buildings was in some cases problematic and excavation of a complete undisturbed structure was not possible due to the plethora of later features. In view of these difficulties the criteria for definition of sunken-featured buildings need to be reviewed briefly. Plan form was very variable – regular rectangular examples were atypical and sub-rectangular and oval forms were encountered frequently. As a result there was a significant degree of uncertainty in distinguishing between potential sunken-featured buildings and large shallow pits of oval shape, particularly as such features seem to have been quite common in Zone 6. In several cases, both in Zone 6 and in Zone 20, features apparently of both types were closely juxtaposed and may have had complementary functions. Features of both types often had sloping sides – neat, vertically cut profiles were not common. Internal features such as hearths and postholes served to identify sunken-featured buildings, but not all potential examples had these features – their absence does not necessarily preclude identification of a feature as a sunken-featured building, and in any case is not demonstrable where features were not fully excavated. In the following table (Table 4.2) the distinction between pits and sunken-featured buildings has been drawn as closely as possible, but there is still uncertainty of interpretation in some

cases. Some features initially identified as sunken-featured buildings but now thought less likely to be of this type have been listed separately in the table as possible examples, but this section does not list all the large shallow pits which might also have been included in this category and the 'possible' examples have been omitted from the following discussion.

Sunken-featured buildings were in use in early, middle and late Roman periods, but only four (two each from Zones 6 and 20) were assigned a middle–late Roman or late Roman date. This is consistent with the general scarcity of evidence for late Roman activity in the scheme area. Moreover, the same problems of dating which have long been recognised in relation to Anglo-Saxon sunken-featured buildings (eg, Tipper 2004, 25–26) are equally applicable to the Roman structures; that is to say that much of the material from their fills is likely to have accumulated once the structures had fallen out of use and need not reflect the chronology of the buildings themselves, nor need it reflect directly the functions carried out within them. Exactly similar problems were encountered at Monkton (Hicks 2008, 273). An interesting, if predictable, sidelight on infill sequences is shed by the snail evidence from possible sunken-featured building 217091 in Zone 19, where snails from the uppermost fills suggested that 'the feature became overgrown with rank grass and possibly a little scrub' (Vol 2, Stafford, Chap 19), a good picture of an abandoned structure.

Aspects of the superstructure and other characteristics of these buildings will be discussed further below. In the present case, however, there is almost no evidence relating to these buildings outside the sunken elements. As indicated above, these varied considerably in size and form, from irregularly ovoid to quite neatly rectangular, and from quite small (the smallest example, 249199, measured 3.8m by 1.95m) to fairly substantial (the largest examples were 249081, which measured 10.95m by 6.2m, and 249083, with maximum dimensions of 8.90m by 7.90m). Structure 249199, of early Roman date, was from Zone 10 while the two largest, both from Zone 20, were of middle Roman and late Roman date respectively. Overall the sample is too small to allow reliable identification of clear-cut trends in terms of size variation by period. A rough calculation of mean surface area of the pits, however, suggests a steady increase in mean size through time (Table 4.3), with a (presumably coincidental) roughly 70% increase in surface area from each period to the next. With only four examples the significance of the late Roman figure is uncertain, but the trend seems fairly clear. The greatest range in sizes was seen in the middle Roman period, with one of the smallest examples (228059) and one of the largest (249081, see above).

As already mentioned, the EKA2 sunken-featured buildings ranged from simple oval to sub-rectangular to rectangular in plan. There were no examples of the more complex plans seen in a few cases at Monkton, unless the contiguous features 249082 and 250094 in Zone 20 formed part of a single structure just east of structure 249081 and at right angles to it. On balance, however, these features have been considered more likely to be pits than structures, but both were heavily disturbed by modern services and their interpretation is rather uncertain. A roughly similar spatial arrangement of sunken-featured building and associated pit on a perpendicular alignment is seen in Zone 6, where structure 170136 and probable pit 132098 were assigned to the middle Roman period, the gap between them being filled subsequently by late Roman sunken-featured building 170135, on the same alignment as the earlier structure. These arrangements indicate a degree of spatial organisation, but there was certainly nothing remotely resembling the multi-celled structures SFS 14 and SFS 15 at Monkton (Hicks 2008, 128–134).

With one exception, the EKA2 sunken-featured buildings ranged from 0.2m to 0.88m in depth, but there was clear variation in the extent of truncation; some of the shallower examples may originally have been deeper and in any case the depth of the contemporary topsoil at the time of construction also has to be taken into account. There was one exceptionally deep example, late Roman structure 249083 in Zone 20, which had a recorded depth of 1.34m. This seems to have been a consequence of reuse of a feature originally dug for another purpose, perhaps as a quarry, but the presence of steps, internal postholes and a hearth leave little doubt about the interpretation of the feature in a secondary phase.

Such characteristic elements were not consistently present in sunken-featured buildings. In addition to the steps associated with structure 249083, ramps or stepped hollows were only noted in four other structures, with no particular pattern in terms of their position and other characteristics. Internal postholes were noted in nine of the 18 buildings, but again there was considerable variation in their location, and therefore in their likely function. Postholes tended to be located towards the edges of the pits, but there was not a single example of a sunken-featured building with regularly spaced marginal postholes or other possible edge-retaining features (as for example in the Iron Age structure 174060 in Zone 13). Only in the relatively modestly-sized structure 191125 were three postholes positioned approximately on the centre line of the pit, where they might have supported a ridge pole. The largest example (structure 249081) had no clearly-defined internal postholes at all. Roof ridges and other structural elements were either supported on timbers which simply rested on the base of the sunken floor, or these elements were carried on timbers or other members resting on the ground outside the pits. The proportion of the overall interior space of the buildings which was represented by the sunken component is uncertain, as is the nature of their superstructure. At Monkton it is implied that the sunken element was more or less the entirety of each structure (Hicks 2008, 274–5). Many (but not all) of the examples there were quite regularly rectangular in plan, which would support such a view. The EKA2 sunken-featured buildings include a larger number of slightly irregular form. The question of whether such forms reflect the shape of the

Table 4.2 Summary of Roman sunken-featured buildings

Landscape/Zone	*Period*	*SFB*	*Shape*	*Length*	*Width*	*Depth*	*Ramp*
Certain and probable examples							
3/6	MR	170136	sub-rectangular	6.40m	2.20m	0.24m gradually sloping sides	N
3/6	MR	170168	ovoid	5.40m	4.60m	0.45m	N
3/6	MR	130227	sub-rectangular	4.95m	4.40m	0.58m	on N side with 2 PHs at N end
3/6	LR	170132	irregular ovoid	7.90m	5.60m	0.64m	shallow stepped hollow to SE
3/6	LR	170135	sub-rectangular	5.70m	4.48m	0.43m	N
2/10a	ER	249233	sub-rectangular	4.10m+	2.40m	0.20m	N
2/10a	ER	249199	sub-rectangular	3.80m	1.95m	0.36m	in SW corner
2/13	ER	191125	rectangular	4.70m	2.70m	0.50m	N
2/13	ER	193140	sub-rectangular	5.50m	5.30m	0.65m	on centre of N side, associated post and stakeholes
1/19	ER	126117	sub-oval	3.85m	3.24m	0.26m	N
1/19	ER	217091	sub-rectangular/oval	4.07m	3.50m	0.57m	N
1/20	MR	249049	regular rectangle	4.00m	3.00m	0.32m	N
1/20	MR	249081	sub-rectangular	10.93m	6.20m	0.30m	N
1/20	LR	249083	irregular	8.90m	7.90m	1.34m	steps 249066
1/20	M–LR	249085	sub-rectangular	10.0m	5.50m	0.53m	N
1/20	MR	257037	irregular oval	4.50m	3.30m	0.40m	N
1/20	MR	228059	oval	3.49m	2.36m	0.48m	N
1/20	MR	279028	sub-rectangular	7.0m+	4.60m	0.55m	N
Possible examples							
3/6	ER?	170175	sub-circular	5.80m	4.40m	0.51m sloping sides	N
3/6	MR	132098	sub-rectangular	5.70m	2.35m	0.28m	N
3/6	MR	247146	ovoid	3.50m	2.50m	0.34m	N
1/20	MR	249082	irregular?/ sub-oval	6.62m	5.18m? poss *c* 3.5m	0.32m	N
1/20	MR	250094	oval	3.02m	2.65m	0.88m	N?

KEY: ER – early Roman; MR – middle Roman; LR – late Roman

superstructure is an important one given the nature of evidence for structures on 'normal' lower status rural settlements in this region. Such evidence in fact appears to be scarce; certainly the sample of such structures from the High Speed 1 (HS1) sites, for example, was extremely small (Booth 2011a, 270–275), to the extent that it is still difficult to determine what 'typical' structural types really were. It is possible that circular or sub-circular plans remained a part of the structural repertoire, but this is far from clear. If this were the case, however, it could be argued that the oval or sub-oval shape of some of the sunken-featured buildings did indeed reflect their overall plan form, with obvious implications for the nature of their superstructure. Alternatively, the sunken elements were just one part of the overall structure plan, which could have been rectangular. Neither suggestion is capable of proof given the lack of clear evidence for the presence (or absence) of

Postholes	*Oven/hearth*	*Finds*	*Comment*
cluster of postholes within the southern end	N	two fragments of a small (possibly child's) Cu alloy bracelet (ON 3983) and fragments of Cu alloy sheet, plus pottery, animal bone, tile and oyster shell	
two large postholes within N end	N	small quantities bone and shell, more pottery	fenced enclosure and well
more on S side	N	pottery, bone, fired clay spindle whorl ON 3900, shale bracelet frag ON 3901	
1 SE & 1 NE	176181	Cu alloy bracelet (ON 3218) and rod (ON 3987). Cu alloy brooch pin (ON 885), Fe socketed projectile point (ON 4094), and glass ?mirror fragment (ON 4033) came from layers sealing the oven	oven secondary, not on base of structure
N	on W side	animal bone, pottery, tile	
1, centre of E edge, 1 on SW side and 1 to N. Cluster of smaller stake-holes towards the centre of the building	N		one end truncated
N	N	include amphora sherds	
3 approx on centre line	N	little pottery, Fe chisel	1C?
?4 on E side	173198 etc in SW corner	large quantities, pottery, animal bone, f clay, metal objects etc	shallow pit E of oven, other pits outside probably associated
N	126175 in centre, ?associated posthole	pottery, small amounts of animal bone	
3	N	pottery, small amounts of animal bone	
N	N	pottery, some CBM and animal bone	2 neonate burials (incomplete, ?disturbed)
N	in SW corner, 1 associated posthole	pottery, animal bone and shell, tile, fired clay and Fe objects (mostly nails). *c* 0.5kg of slag	1 neonate in fill, 1 later cut into backfilled feature
5	in SE corner	very large mixed assemblage, incl slag and various metal objects/fragments	beaten earth/ chalk floor
N	193070 in SE corner	large mixed assemblage, incl Fe objects and a little hammerscale	neonate in NE corner
N	N	pottery, small amounts of animal bone and CBM	almost certain
N	228060 in N	pottery and a small amount of animal bone and CBM. Fe objects include nails and an almost complete knife. Cu alloy ?brooch pin	
N	N	pottery, bone, shell, CBM, nails, small amounts of fired clay, slag and worked stone	truncated at S end
N	N	animal bone and pottery, a fragmentary fired clay ?loomweight (ON 4771)	
N	N	similar to 170136 including an iron fitting (ON 3294) and unidentifiable Cu alloy object (ON 3980)	
N	N	fragments of tile. Fe hinge (ON 899), and a socketed hook-shaped cutting tool (ON 897). Charcoal-rich	
N	N	pottery, frequent animal bone and small amounts of CBM, fired clay and slag	
N?	N?	Fe nails, sheet and slag frags, whetstone, CBM, pottery, animal bone	

ground-level structural elements outside the confines of the sunken features. In either case superstructures seem likely to have consisted of chalk and/or clay cob type walls, which are unlikely to have left any trace after abandonment or demolition (see Vol 2, Poole, Chap 12). Building daub, as opposed to fired clay with wattle impressions which is likely to have derived from oven structures, was extremely rare; the use of turf or cob for superstructures was also suggested for Monkton (Hicks 2008, 274–275). Roofs there were not tiled, even on those buildings which were fairly certainly of rectilinear plan (*ibid*, 274–275), and while significantly more tile was recovered from the EKA2 sites this was probably used entirely in hearth and oven structures (see Poole, below).

Ovens or hearths were found in a minimum of seven of the sunken-featured buildings. These tended to be placed towards the corner of the structures. The preservation of these structures varied considerably, but amongst the best-preserved were 176181, a secondary feature in late Roman sunken-featured building 170132

Table 4.3 Surface area of sunken-featured buildings (sq m) by zone and period

	Early Roman	*Middle Roman*	*Late Roman*	*Comment*
Zone 6		130227 19.6		
		170136 12.7		
		170168 15.6		
			170132 32.7	
			170135 19.1	
Zone 10a	249199 6.7			
	249233 8.4+			One end truncated
Zone 13	191125 11.6			
	193140 23.6			
Zone 19	126117 8.7			
	217091 12.6			
Zone 20		228059 6.5		
		239049 12.4		
		249081 50.6		
		257037 11.9		
		279028 34.3 +		One end truncated
			249083 51.1	
			249085 39.4	One end truncated
Surface area total	71.6 sq m	163.6sq m	142.3 sq m	
Period average area	11.9 sq m	20.5 sq m	35.6 sq m	

in Zone 6, which incorporated chalk blocks in its structure (Pl 4.24), and an unusual L-shaped oven (193070) of middle–late Roman date set into the corner of sunken-featured building 249085 in Zone 20. The latter had a lower chamber with walls constructed of clay and reinforced with stone slabs in the main firing area at its west end. A collapsed upper chamber had a floor of tegulae and bricks inset into the walls (see Poole, below). A further relatively well-preserved example was the oven which occupied a significant part of structure 228059 (Pl 4.25), mentioned above, and survived to a height of 0.40m. These were substantial structures. At Monkton, five sunken-featured buildings contained hearths, while scorching on the bases of another five was interpreted as perhaps indicating the presence of braziers (Hicks 2008, 276). The latter were presumably specifically associated with provision of warmth in a domestic context, but hearth and oven structures could have had a variety of functions beyond domestic heating and cooking. Briquetage associated with oven 193070 suggests use in salt production, and crop processing and metalworking are other possible uses, although the hammerscale derived from sunken-featured building 249085 seems unlikely to have been directly associated with oven 193070.

Pl 4.24 Oven 176181 in late Roman sunken-featured building 170132 (Zone 6; view from south-west)

Pl 4.25 Sunken-featured building 228059 (Zone 20; view from west)

In general, the hearths and ovens provide the best, although far from clear cut, evidence for the functions of sunken-featured buildings. A number may have combined domestic and other specialised purposes, some may have had exclusive craft- or storage-related functions, but in many cases identification of any of these is speculative. A case in point is the small ovoid structure 228059 in Zone 20, a good third of the length of which was taken up by a substantial oven and its adjacent stoking area. The remaining area seems unlikely to have been large enough to have served as domestic space. In this last case the spatial arrangement is such that accommodation of the oven (whatever its use) may well have been the primary function of the structure. It may even be questioned whether such a structure was actually roofed, or whether a specific function of the pit was to provide protection from the wind, achieved more effectively by this means than any other. In the site narratives above some of the smaller examples of sunken-featured buildings have been considered as 'ancillary' structures, with the presumption that they did not serve a domestic function, but in the absence of specific evidence for function this distinction is usually made solely on the basis of size and the perceived unsuitability of the smaller structures for domestic purposes. Such assumptions may be perfectly justified but apart from issues of size there is no direct evidence to substantiate them.

As is clear from the above discussion, Monkton provides the best parallels for the EKA2 sunken-featured buildings, and can be regarded as the type-site for structures of this kind in Roman Britain. These now seem to have been very common on Thanet, to the extent that in the absence of other evidence they may be reasonably regarded as the principal structure type used in lower status rural settlements here. A further isolated example about 1.7km north of the Monkton settlement is known from the Thanet Earth development (Rady 2009; 2010) and most recently several more have been recorded from adjacent sites at Tothill Street in Minster (Gollop and Mason 2006; Chapman *et al* 2012, 353), effectively mid-way between Monkton and EKA2 Zone 20.

Occasional examples of this type of structure are known from other relatively recent work in Kent. There are two closely adjacent possible examples from just south of Gravesend, one found during High Speed 1 (HS1) work (Booth 2011a, 275) and another on the line of the A2 nearby (Allen *et al* 2012, 415–6). The former example was of early Roman date while the latter, only tentatively identified as such, contained a variety of finds but only one datable artefact, a sherd of 4th century pottery. Three probable early Roman sunken-featured buildings have now been identified at Canterbury in a roadside location some 100m outside the line of the (later) Roman town wall. These were superseded by use of the site as a cemetery in the late Roman period (Gollop 2012, 13–14). A very few examples are known from further afield in Britain and have been mentioned by Hicks (2008, 276–7).

The question of the origins of this building type remains of interest. With the exception of the anomalous Iron Age feature (174060) from Zone 13 (see Fitzpatrick, Chap 3) there are no pre-Roman examples from EKA2. A single structure perhaps of Middle Iron Age date has been recorded from an enclosure at Tothill Street, Minster (Gollop and Mason 2006, 25), with another, unpublished, Late Iron Age example at Trinity Square in Margate. It is unclear, however, if these examples should be seen as ancestral to the Roman tradition, although it may be noted that feature 174060 did display some of the characteristics seen in the later examples, such as an entrance ramp and evidence for some postholes around the circumference of the pit. In terms of other possible influences on the origins of this tradition there is nothing obvious in the adjacent continental Late Iron Age structural repertoire that suggests direct influence from that source (eg, Haselgrove 2007, 504–6). Rectangular pits are a fairly frequent component in some structures of Late Iron Age–early Roman date from that region, but in this case they seem to occur consistently as subsidiary elements covering only a small proportion of the ground surface occupied by these buildings, which are characteristically of posthole construction. The interpretation of these features as cellars/storage spaces seems uncontroversial. While a connection with the Thanet tradition cannot be completely ruled out it seems highly unlikely that it was a close ancestral one. Other structures of Roman date from the EKA2 sites consist mainly of the few four-post (and perhaps also eight-post) structures mentioned above. These seem certain to have been ancillary structures, most probably for grain storage. One further, larger building of broadly similar type was present. This was structure 190431 in Zone 11, based on three parallel rows of postholes, aligned roughly north-south. It is likely that each row originally contained five posts, but the north-west and south-east corner postholes of this putative arrangement were missing, while the significance of another posthole (154064) further south of the probable south-east corner position is uncertain. The overall dimensions of the structure as represented by the distribution of postholes is likely to have been about 10m north-south and 5m east-west. It seems most probable that this was simply a larger version of the multi-post based raised floor granary type structure. A middle Roman date is possible for this structure; in any case evidence for replacement of some of the posts suggests that it remained in use for a reasonable length of time.

Overall, in the absence of clear evidence for round-houses of Roman date and given the indications that posthole structures were principally agricultural in function, there seems little doubt that here, at least, the sunken-featured building tradition was dominant for domestic structures, albeit with the potential for more specific functions as well.

The military

The location of the project area adjacent to the likely sites of successive Roman landings in the 1st centuries BC and AD makes the question of military impacts on the area one of particular interest and potential

importance. The possible association of features in and around Zone 6 with the Caesarean expeditions of 55 and 54 BC has been discussed in Chapter 3 by Andrew Fitzpatrick. The first question that follows from this is that, if the association is accepted (whether as established or as a model for further consideration), were there any longer term consequences regarding special use (or disuse) of the site? What, if any, were the resonances of this episode for the local inhabitants and their settlements, and on the other hand, was this location considered significant, whether for ideological or practical reasons, when it came to the invasion of AD 43 (see further below)? The location of the Claudian landings, for long assigned without question to the vicinity of Richborough, has been the subject of intense debate in the last 20 years (amongst a large literature, eg, Hind 1989; Bird 2000; Frere and Fulford 2001; Grainge 2002; Manley 2002), with a case made for the Chichester Harbour area as an alternative primary focus. This debate does not need to be reviewed in detail here, and the issue can be regarded as 'not currently resolvable' (Mattingly 2006, 95), although Millett (2007, 141) considers that the 'balance of probability' favours landings in East Kent. For present purposes it is assumed that East Kent probably was the location of the primary landings in AD 43. The view that there were further landings in Sussex at about the same time or very shortly afterwards, while plausible, is therefore irrelevant to consideration of the military impact on Thanet. What is clear, however, is that the 'Claudian bridgehead' at Richborough was probably smaller than once thought (Cunliffe 1968, 232–4) since the extent of erosion of the elevated ground on which the fort stood may have been less than previously estimated (Millett and Wilmott 2003, 185–6, 193; Millett 2007, 141), albeit that this erosion had totally undermined the eastern side of the site. Whether the inception of the subsequent Claudian supply base can be dated as precisely as AD 44 (Cunliffe 1968, 234), a date clearly dependent upon the historical framework, is uncertain, but that there was extensive activity at Richborough very early in the Roman period is not in doubt. This must have had implications for closely adjacent communities, which will have included that in and around Zone 6, only 3km north of the military complex. The fact that the intervening Wantsum Channel was perhaps almost as wide at this point will probably have made little difference to communities, whether British civilian or Roman military, familiar with boats. A possible small fort has also been identified at the north-west end of the Wantsum Channel at Reculver, some 12km from EKA2 Zone 6. This seems likely to have been occupied in the mid-1st century AD (Philp 2005, 98–102, 192–3), but associated closely-datable material is very scarce, although early coins, absent from the excavated list (Reece 2005, 110) were found in about 1700, probably well to the north of the surviving site (Philp 2005, 193).

As so often, however, the direct impact of conquest period activity is not readily seen in the settlement record, although it may be detectable in Zone 6 where there may, uniquely, have been a longer term impact on settlement as a result of the expeditions of Julius Caesar a century earlier (see Fitzpatrick, Chap 3). This may be manifested in the evidence for reworking of the very large linear feature tentatively associated with the Caesarean expeditions. The later ditches are not very closely dated, though what evidence there is would be quite consistent with the period around the middle of the 1st century AD. The later ditches have elements of both consistency and variability. They are consistently dug on the outer edge of the 'Caesarean' feature and are all approximately V-shaped in profile, narrower, though not necessarily more steep-sided, than the latter. There is, however, variation in size and profile and perhaps in the number of cuts involved. The more northerly components (see for example, Fig 3.64 sections 262118/262124 and 33) are the widest and deepest and most nearly V-shaped in profile. Evidence for recutting is at best ambiguous and seems to have involved the upper part of the profile. Further south the ditches are smaller and their profiles are more rounded. At least two main cuts are evident in these sections, the later one being the smaller of the two in two cases and being cut on the inner side in two cases, but there is little consistency of detail. In one case (section 127091) the profile of the fills suggests infilling from the outer? (south) side, while in another (section 29) it appears to suggest the reverse, whereas the evidence in the other main sections is inconclusive in this regard. Whether these ditches can really be characterised as military, much less assigned specifically to events around AD 43, cannot be determined. The fact that they follow closely the earlier circuit, however, is suggestive, not least because it seems unlikely that the local community would have been keen to perpetuate the earlier alignment on their own initiative. Whatever its precise raison d'etre, the scale of the work involved is substantial and certainly greater than what might be expected for a minor rural settlement of 1st-century date. This factor supports, but does not prove, the idea of a military association. Possible uses for an enclosed area in the conquest period could have included definition of a place for stockpiling supplies of agricultural produce (including animals on the hoof) prior to transport across the Wantsum to Richborough.

As discussed above (see Chronology), areas of Late Iron Age to early Roman occupation (particularly Zones 10, 11, 13 and 19, and perhaps Zone 6) appear to show continuity of occupation on the basis of pottery and other evidence, although a short term hiatus unaccompanied by significant reorganisation of settlement features would probably be very difficult if not impossible to identify in the archaeological record. It is at least clear that direct evidence for violent events, for example in the form of burnt structures, is absent. Demolition of a large roundhouse and the presence of burnt material in postholes and stakeholes at Hersden, some 12km west of EKA2 Zone 6, might indicate such disruption at about this time (Barrett 2006, 20), in which case the concentration of activity on an apparently high status structure might be significant.

Zones 10, 11 and 12 show no radical changes in site plan at this time – the general alignment of trackways

and enclosures appears to have been maintained throughout the Late Iron Age and early Roman periods, though the latter may have seen an intensification of the level of occupation. A moderate level of activity in Zone 14 in the Late Iron Age–early Roman periods may be indicated by enclosure type features, although these are only associated with minimal amounts of pottery – either way there are no indications of mid-1st century discontinuity. On the chalk ridge (Landscape 1) there seems to have been a gradually evolving sequence of both settlement and cemetery activity, but again with no obvious hint of disjuncture, although the overall volume of activity in the relevant period is probably inadequate to allow identification of sequence discontinuities. Overall, therefore, as might have been expected, there is no clear evidence for major landscape impacts in this part of the south-east corner of Thanet as a direct consequence of the invasion of AD 43. It is, however, admitted that the ceramic assemblage and settlement sequence are blunt tools for the identification of what may have been a highly traumatic episode, but one of short duration with few medium term impacts upon settlement form or material culture.

Richborough will have remained a significant focus for the area after the conquest period. After the abandonment of the supply base/storage facility (as revealed within the area of the later fort), a process which may have begun before the beginning of the Flavian period (Millett and Wilmott 2003, 187), the site developed as a substantial nucleated settlement, of considerable extent by the time of its peak (perhaps around the middle of the 2nd century; *ibid*, 188). This was largely of civilian character but presumably had an official element of some kind in view of its importance as a port and the 'gateway to Britain' as suggested by the presence of the 'Great Monument', generally thought to have been built *c* AD 85, but perhaps of Hadrianic date (Coombe *et al* forthcoming). With regard to the latter, Millett and Wilmott (2003, 188) speculate about the significance of the secondary 'north-south' axis (the 'east-west' axis being the alignment of Watling Street and the causeway linking the Richborough island to the mainland), suggesting that it reflected the location of harbour facilities to the south, and that 'the axis may relate to some other symbolic feature of the landscape – perhaps due north on the other side of the Wantsum Channel on Thanet'. In fact it aligns quite closely with the head of the Ebbsfleet peninsula at Zone 6, the location of the possible Caesarean (and perhaps later) military installation. Given the symbolic significance of the monument at several levels, it is quite possible that reference to earlier events formed part of the programme that lay behind its planning.

A sequence of structures lying just north-east of the monument and originating as early as the later 1st century has been identified as a probable mansio (Cunliffe 1968, 241; Black 1995, 18–20, 42–3). The likely official significance of this seems to have been maintained into the ?mid-3rd century when a more overtly military role resumed at Richborough, indicated initially by the construction of the earthwork enclosure around the now dilapidated monument but respecting the position of the probable mansio. The latter was then removed in the course of construction of the Saxon Shore fort, for which a date in the period *c* AD 277–285 has been suggested (Johnson 1970; supported, for example, by Blagg (1989, 143) and Pearson (2002, 58)), rather than under Carausius, as favoured by Cunliffe (1968, 262–264), although the case for the latter has been restated by Fulford and Tyers (1995; Fulford and Rippon 2011, 123). It is presumed that reasonably intensive military activity was then more or less continuous through the late 3rd and 4th centuries, although there is relatively little structural evidence to provide direct support for this (Cunliffe 1968, 248). Related metalwork is fairly common (see for example, Lyne 1999) and the very large quantities of 4th-century coinage, particularly of the end of the 4th century, are well known (Reece 1968). The garrison of Richborough at this time is not certain – there is no clear evidence that the unit of legio II Augusta, attested in the *Notitia Dignitatum*, was necessarily stationed there before the later 4th century (Fulford 2002, 98–99). Meanwhile, activity at Reculver shows a rather different pattern, with construction of the fort probably in the later 2nd century (Philp 2005, 216) and military occupation particularly intensive through the 3rd century, but apparently at a reduced level in the 4th century after *c* AD 330 (Reece 2005, 106) if not before, and only minimal activity in the final third of the century. The date of the latest activity at Dover is unclear, but in terms of coin loss it lacks the large numbers of late 4th century issues seen at Richborough (Philp 2012, 155).

In terms of the influence and impact of the official/military population of Richborough (and perhaps Reculver) on south-east Thanet the principal questions are likely to relate to requirements for supply, both of foodstuffs and perhaps a wider range of resources (including, for example, horses). Whether these requirements were met indirectly through the taxation system or through more direct processes of requisition is unclear, but the suggestion (by Strid, see below) that the reduction in the proportion of cattle in the EKA2 animal bone assemblage in the early Roman period reflects the removal of significant numbers of animals on the hoof for consumption by the military is attractive; direct early Roman impact on cereal production would be less readily identifiable. Either way, by the 4th century, direct acquisition of resources within the framework of the *annona militaris* is likely (eg, Lee 2007, 85–87).

There are a number of metal items from Zone 6 that might be relevant in relation to these contacts; fragments of weapons, related fittings and belt equipment of various dates. These include a dagger fragment (ON 3871) from pit 320005 of Late Iron Age–early Roman date. If a documented military association is sought, neither the date of the context nor the form of the (incomplete) object allows distinction between the campaigns of Caesar and Claudius, so the specific significance of this object is uncertain. More clearly of 1st-century AD date and therefore potentially associated

with the Claudian conquest or subsequent activity was a copper alloy buckle plate with punched decoration (ON 4311; Fig 4.120, 3) from one of the poorly-stratified colluvial deposits at the southern end of Zone 6. The same deposit also produced a mount fragment (ON 674), less closely dated and less certainly with military associations, as well as a small pendant fitting (ON 3297) perhaps, but not certainly, of earlier date (see Vol 2, Scott, Chap 3). Three pieces of copper alloy scabbard binding (ONs 692, 2120 and 3223) were also recovered, while iron objects also from the colluvium included a missile point, a possible tanged arrowhead, three spearheads and a dagger blade (ONs 698, 699, 2957, 2982, 3200 and 2988 respectively). Another component element of this deposit contained a late Roman buckle with a saddle-shaped loop (ON 335, Fig 4.120, 5) while a further late Roman buckle with oval frame and plate (ON 990145, Fig 4.120, 4) came from ditch 170099 (phased middle Roman). The fill of late Roman sunken-featured building 170132 produced another iron weapon point (ON 4094, Fig 4.120, 1). Much of this material is not closely datable on typological grounds, and in a few cases a strictly military origin may perhaps be questionable, while the context of most of these pieces is completely unhelpful for dating. Nevertheless, the total quantity of material (some 18 pieces excluding those fairly certainly pre-dating the mid-1st century AD) is quite striking.

What they represent, however, is less clear. Casual loss of this quantity of material, even over a fairly extended period, seems unlikely. Equally, with the possible exception of a brief episode of activity in the mid-1st century AD, post-Caesarean military occupation of the Zone 6 area seems extremely unlikely, and is not supported by other aspects of the artefactual record. In particular, the pottery assemblage lacks characteristic material such as Claudian samian ware, and the modest collection of 1st-century imports is perfectly consistent with low level trading contacts sustained through the early Roman period, rather than deriving from a specific phase of activity of brief duration. It is perhaps as likely that much of the military metalwork reached the Zone 6 settlement as a result of scavenging or recycling from Richborough. Whether this was true of the late Roman buckles as well as the ironwork is uncertain. Beyond Zone 6 the distribution of this type of material was at best very limited. A notable individual item was a spur from ditch 159244 in Zone 14, but it is possible that this was of Anglo-Saxon rather than late Roman date.

Craft, trade and industry

There can be little doubt that the principal economic concern of most of the inhabitants of this part of Thanet would have been with agricultural production, discussed above. Such evidence as there is relating to crafts is for activities which would have been carried out in an agricultural context. Important amongst these would have been smithing, which is the craft best-represented by the archaeological evidence, although the total quantity of this evidence is still relatively modest. The material was most obvious in Zone 20, where iron slag and small concentrations of fragmentary objects were found in the fills of sunken-featured buildings 249081, 249082, 249083, 249085 and 250094. None of these assemblages was large, with the majority from 249083, and the slag all probably derived from smithing, while the fills of 249085 also produced a small amount of hammerscale. Overall, this material is indicative of smithing in the vicinity of these structures, but does not necessarily mean that it was carried out within any of them, given the nature of their fills discussed above. Even the hammerscale in SFB 249085, while not likely to have travelled far, could have been deposited in dumped material. A whetstone (ON 4164) in SFB 250094 could also have been related to iron smithing activities, although a more general domestic or agricultural function is equally possible. There was no ironworking debris suggestive of smelting.

A little evidence for ironworking in the form of slag came from Zone 10, while elsewhere quantities of slag were very small, even in areas of intensive settlement activity such as Zone 6. Evidence for non-ferrous metalworking, perhaps of Roman date, consists of a single probable crucible fragment from early Roman ditch 170032 in Zone 6.

Textile production would usually have been important in a rural domestic context, but direct evidence here is relatively scarce. Twelve probable spindle whorls were identified, seven trimmed from pottery sherds and one from a piece of tile, two of fired clay and two of mudstone. Six of these objects came from Zone 6, three from Zone 13 and one each from Zones 10, 11 and 19; in terms of chronological distribution six were of early Roman date and three each were Late Iron Age–early Roman and middle Roman. Only two spindle whorls came from sunken-featured buildings, a reworked pottery sherd from early Roman sunken-featured building 193140 in Zone 13 and a fired clay object of this type from middle Roman structure 130227 in Zone 6. The small number of worked bone objects of Roman date came mostly from Zone 6 and, as was the case in the late prehistoric period, the majority may have been associated with textile production. They include four gouges and 'points' and three pins. Sheep metapodials with polished and sometimes grooved surfaces (as a result of use) are also thought to have been used in some way in weaving. Examples were found in Zones 6, 13 and 21. The function of perforated triangular fired clay objects, often described as loomweights, is controversial (Poole 1995), but the fragments of such objects, including one from sunken-featured building 170175 in Zone 6, are here considered more likely to relate to hearths and ovens than to textile production. A specific association with salt production (see below) seems certain for at least some of these objects.

It is likely that a wide range of minor crafts was practised in the settlements of the area, but these have left little or no meaningful evidence, although some activities can be identified on the basis of distinctive tools associated with them. The largest body of such evidence

comes from Zone 6, where activities indicated by tools include woodworking and leatherworking. An axe head, a saw blade, chisels and a pair of dividers (if not related to some other activity) suggest the former, while an iron 'traveller' is more specifically probably a wheelwright's tool, used for measuring the circumference of a wheel. The specialist nature of this unusual type of object is underlined by its occasional occurrence in graves, typically of Late Iron Age–early Roman date (eg, Scott 2012a, 293–5, written before the presently preferred interpretation was identified), and it is notable that another object of this type came from inhumation grave 126204 in the cemetery at the eastern end of Zone 19. A draw-knife is a probable tanner's tool, while leather-working is indicated by an awl and a needle. Further tools include a cold chisel and a blade from a pair of shears, for the latter of which multiple uses are possible.

There are no direct indications of 'industrial' activity such as pottery production, although there is evidence for production of Late Iron Age or possibly very early Roman date in the form of wasters from a ditch underlying one of the villa buildings at Minster, very close by (Lyne 2011, 253). A specific activity involving ceramic material is indicated by the occurrence of a few tesserae formed from Dressel 20 amphora sherds, from early Roman ditch 249250 in Zone 10. This was presumably the result of a one-off event of uncertain significance. Other ceramic recycling – for example the conversion of another amphora to form the container of cremation burial 153060 in Zone 19 and the comparable trimming of an amphora handle noted in SFB 193140 – similarly represent single events within a wider pattern of fairly systematic reuse of ceramic material, particularly building material, and it is possible that amphora fragments were collected at the same time as ceramic building material, but these hardly amount to routine activities.

The one local industry that is suggested by physical evidence in some quantity is salt production. This is demonstrated by the presence of briquetage and related fired clay material. Poole (see below) indicates that this material is similar in character to the Iron Age assemblage, the industry seeing little change in technology, although there does appear to have been an increase in the volume of production in the Roman period. Briquetage vessel fragments came from Zones 6, 10 and 13, while structural material was also found in Zone 20, where it included a large block of oven floor with green glaze from a late Roman ditch (217122), while the association of briquetage fragments with oven 193070 in sunken-featured building 249085, also in Zone 20, has already been mentioned. The distribution of the evidence is of some interest. It is clearly not confined to strictly coastal locations (Zone 6 might perhaps be described in such terms), although even Zone 20 may have been little more than 2km from the Wantsum shore. This situation is paralleled in evidence from a number of recent projects, with salt production debris of Iron Age (see for example, Morris 2012) and Roman date recorded, in some cases in relatively substantial quantities, from a number of sites in North Kent from Dartford to Gravesend (eg, Poole 2011a, 139–140; 2011b; 2011c, 323, 325) all located at some distance from the coast. In those cases it is presumed that the activities involved related mainly to secondary stages in the salt making process, such as packing.

The apparently local character of salt production suggested by the briquetage is supported by the view (see Poole below) that the material had relatively little in common with briquetage from other areas of Kent (eg, Miles 1975). Despite indications of an increase in the volume of production in the Roman period this remains a relatively modest cottage industry which bears no comparison with the scale of activity elsewhere within the Thames estuary (eg, Miles 2004; for recent work in Essex see, for example, Biddulph *et al* 2012) and perhaps also on the south coast of Kent, where the briquetage tradition at Scotney Court was certainly quite different from that at EKA2 (Barber 1998). The shores of the Wantsum Channel might have been particularly convenient locations for salt production, a view perhaps supported by the suggestion that the name *Rutupiae* (Richborough) does not have a meaning related to 'muddy streams' (Rivet and Smith 1979, 448–450), but rather derives from a root meaning 'red' and relates to the presence of red hills, a distinctive by-product of some traditions of salt production (Durham and Goormachtigh 2012).

Ceramics form the most obvious means for assessing trade links to the EKA2 settlements. Much material probably derived from very local production, already referred to. Other possible sources of this character include Richborough (Pollard 1988, 44), while production sites of 'Native Coarse Ware', particularly important in the later 2nd to 3rd centuries, are suggested as being located on Thanet and on the mainland side of the Wantsum Channel (Lyne 2011, 255; note that Pollard (1988, 98) does not speculate about the origin of this pottery). Canterbury, the home of several production sites in the 1st and 2nd centuries, in particular, was also less than 20km distant. The nearest documented kiln to Thanet was at Preston, only some 10km distant (Bennett *et al* 2010, 8) but presumably sited mainly to provide pottery to the nearby settlement at Ickham. Production of sandy grey wares at this kiln probably fell within the period *c* AD 270–370 (Lyne 2010, 88–89).

In view of the 'gateway' location of Thanet, and in particular the proximity of the EKA2 sites to the major port at Richborough, it is unsurprising that imported pottery reached these sites in at least modest quantities. The variety of this material therefore indicates not that the inhabitants of the EKA2 sites had a wide network of trading links but much more likely simply that they had access to a principal source where the full range of imported pottery and other commodities had already been assembled. Approximately 6.5% (by sherd count) of all the Late Iron Age and Roman pottery from EKA2 sites was imported from the Continent, although whether Richborough was the sole intermediate point at the British end of the various routes involved cannot be certain. Pre-conquest imports, consisting mainly of small quantities of Gallo-Belgic wares, presumably

arrived by a rather different mechanism perhaps involving distribution through local social networks (*cf* for example, Fitzpatrick and Timby 2002, 171), some elements of which may have survived after AD 43. The only pottery of Mediterranean origin of this period consists of occasional fragments of Dressel 1 amphorae. Terra Nigra, Terra Rubra and whitewares, by no means all necessarily of pre-conquest date, all derived from northern Gaulish sources.

The principal classes of imported pottery were (in terms of sherd count) samian ware, which amounted to just under half of all the imported material, and (in terms of weight) amphorae, comprising three quarters of the imported pottery by this measure. These patterns are quite typical. Both of these groups included vessels from a variety of sources, but again the patterns are typical, with Central Gaulish (Lezoux) products forming the majority of the samian ware and south Spanish Dressel 20 olive oil amphorae dominating the amphora group. The minor fabrics in both groups are of interest but are numerically relatively insignificant, and the same applies to the variety of imported finewares and mortaria. The overall range of fabrics present is comparable with that from Monkton (Savage 2008, 158–160) and probably with that from the villa at Minster (Lyne 2100, 232–233), though quantification of individual fabrics there is not given in a form which allows ready comparison with the Monkton and EKA2 assemblages. Similarity would of course be expected in view of the proximity of all these sites, but differences of status between them might have led to variation (see further below), and differences in the chronological profile of some of the EKA2 areas inevitably influenced the composition of their pottery assemblages. The significance of variation between some of the smaller area assemblages is less easily interpreted with confidence. The Zone 6 assemblage contained much the widest variety of pottery, including the only examples of some of the scarcer imports such as Pompeian red ware, African red-slipped ware and North African and Gallic amphorae, but the quantities of these were very small and their presence can be explained in terms of the significantly greater size of this assemblage and the fact that this zone had a longer sequence of continuous activity than most of the others. The second largest EKA2 assemblage is from Zone 20, comparable to that from Zone 6 in extending into the late Roman period, but lacking late Iron Age and early Roman material, with the result that imported (and other) pottery of that period is generally absent. The Zone 20 settlement is closely comparable to (and only 2.5km distant from) the Monkton site, both in terms of topography, structure type and chronological profile. Similarity between their pottery assemblages would therefore also be expected. This is indeed broadly the case, but in terms of sherd count the Zone 20 assemblage contained slightly higher proportions of both imported and British fine wares (a discrepancy partly compensated for by better representation of 'Upchurch type' fine grey wares at Monkton), and, most particularly, a significantly higher representation of samian ware – indeed much higher than from any other component part of EKA2 (that this was not just a freak of sherd count data is demonstrated by the fact that the representation by weight was almost identical to that of sherd count, the figures being 6.6% and 6.9% respectively).

The extent to which fine and other wares of extra-regional British origin reached Thanet by the same distribution mechanisms (via Richborough) as the continental material is uncertain. The quantities of such material, for example fine wares (perhaps) and mortaria from Colchester, mortaria and other white wares from the Verulamium industry, fine wares from the Lower Nene Valley and Hadham, are again small, and in many cases tiny. Late Roman Oxford products were more common, but quantities were still modest (in all, 0.4% of the entire EKA2 assemblage by sherd count), and the total contribution of all British fine and specialist wares (including relatively local elements such as Canterbury mortaria) was a mere 2.6% of the assemblage by sherd count. Extra-regional coarse wares were also present, but again in very small quantities. Amongst these, South-east Dorset black-burnished ware was a rare component of assemblages from several of the EKA2 sites and Alice Holt grey ware was also present. In effect the non-local coarseware component in the EKA2 assemblages was negligible. Water-borne distribution is likely for many of the non-local fabrics, both coarse wares and 'fine and specialist' wares (such as the Oxford products), and perhaps also for products of the Thameside industries including the fine 'Upchurch' material, already mentioned, and black-burnished ware 2, although the latter was not specifically quantified in the EKA2 assemblage (at Monkton (Savage 2008, 158) BB2 comprised approximately 6% of the sherd count and a similar frequency would be expected in the EKA2 assemblage).

Stone objects provide further information on trade connections as their basic materials can often be assigned to identified sources. Querns were drawn from a range of sources typical for Kent. Relatively local sources included Folkestone Beds Greensand, moderately well represented, while Hertfordshire Puddingstone and unsourced ferruginous Puddingstone (also found at Springhead) querns were rare. At least three millstones in addition to hand-turned querns were present in Millstone Grit, one from Zone 7 and the other two from the structure of well 170167 in Zone 6; it is possible that these were recycled material rather than stones used in the Zone 6 settlement. Lava was the commonest quern stone type present in terms of the number of contexts in which it occurred, but the material was heavily degraded so the number of querns represented cannot be estimated; their significance is therefore uncertain, although it is likely that querns in this stone type were relatively common here, as elsewhere in Kent (eg, Booth 2011a, 301; Riddler 2010), though it is notable that at Ickham lava was used only for querns and not for millstones (Spain and Riddler 2010). At EKA2 the quantities of other stone objects are very small and these are therefore insignificant in terms of trade.

Communications

A distinct feature of the Roman landscape sampled by the EKA2 project is the presence of networks of trackways. In a number of cases these perpetuate the use of routes already well established in the Iron Age – there is evidence for arrangements of trackways of even earlier date but these seem to have been superseded before the Roman period. Aerial photographs add very little detail that informs understanding of the organisation of the Roman landscape in the immediate vicinity of the EKA2 route, so inferences about this organisation are based very much on extrapolation from the excavated evidence.

There may have been different trajectories of trackway development. Within settlements, such as in Zone 6, individual trackways were potentially short-lived, their alignments changing in tandem with the dynamic development of the settlement plan, usually indicated by the relatively frequent reconfiguration of enclosures defined by ditches and gullies. Whatever the reasons for such patterns of change within settlements, beyond their limits there was often less evidence, and presumably less need in the past, for landscape features such as trackways to be realigned. Relatively long-term continuity of trackway alignments is therefore a feature of the wider landscape, while discontinuity and change are more common at intra-settlement level.

One specific aspect of communication within Zones 6 and 7 merits slightly more detailed consideration. A NNE–SSW aligned trackway crossing Zone 6 from the southern extremity of Zone 7 was a very long-established feature, perhaps in place from the Early Iron Age. Although massively impacted by the ditch digging episodes of the mid-1st centuries BC and AD, perhaps with military connotations, this alignment seems to have been reconstituted by the middle Roman period. This raises a number of questions which could be addressed much more meaningfully if the dating of all the relevant features was better defined than it is. The first concerns the chronology of 'Late Iron Age–early Roman' trackside ditch 262181, one of several features which, if correctly dated, appear to contradict the suggestion (see Chap 3) that there were no features of this phase close to the south side of the very large ditches. While the associated pottery assemblage is very small (and therefore inconclusive in terms of absolute date), what is more significant is the fact that the northern terminal of the ditch seems to respect the line of the major alignment, though which phase of this alignment it related to is very unclear. One possibility would be to date ditch 262181 after the mid-1st century AD, at a time when any upstanding earthworks connected with either phase of major 'military' ditch might have been slighted, but this is speculative. It is unfortunately unclear if the NNE–SSW trackway alignment was revived in the period between the two phases of major ditch digging. Had this not been the case, the interpretation of these ditches followed here would suggest that a period of at least a century elapsed between the last 'Late Iron Age' use of the trackway alignment and its earliest possible reinstatement in the post-Conquest period. Is such a time lag feasible? Notwithstanding the likely significant reduction in the level of activity in Zone 6 in the aftermath of the possible Caesarean episode, it is not improbable that use of a long-lived access was maintained, even if the precise way in which this was done is not clear (in the absence of features that can be associated confidently with redefinition of the route at that time). Localised adjustment of the route, particularly in the vicinity of the large ditch, may have been the answer. Be that as it may, by the middle Roman period the route seems to have been re-established almost exactly on its earlier line, although it is still unclear how the practicalities of crossing the former ditch alignments were achieved. In Zone 7, one phase of the recuts of the large ditch seems to have had an eastern terminal close to the putative crossing point, but a later ditch line (159247), apparently defining the east side of the NNE–SSW aligned trackway, overlay this terminal position rather than being set to the east of it, so the significance of the spatial relationship is not clear (a problem exacerbated by the restricted working area, which was frequently flooded). It is notable that the line of the trackway runs very close to a projected angle in the major earthwork enclosure – it is perhaps possible that there was always an opening in the earthworks in this area (or alternatively a crossing point that involved bridging ditches with a timber structure) and the key point may have lain immediately east of Zone 7. In any case, the trackway seems to have been out of use by the late Roman period, its course (in Zone 6) disregarded by a linear boundary on a rather different ENE–WSW alignment.

The network of local trackways linked to the line of a more important east-west road along the spine of the chalk ridge (Landscape 1). This road, probably on the line of a long-established routeway and perpetuated in the post-Roman period as *Dunstrete*, formed the axis of settlement areas in Zones 19 and 20 and of the Monkton settlement further west (Hicks 2008) and was a principal route across Thanet to a crossing point towards the west end of the Wantsum Channel in the vicinity of Sarre. This then linked to the road to Canterbury, Margary 11 (Margary 1973, 40–1). Crossing of the east end of the Wantsum Channel (see below) to Richborough would have given access to a different road network also linked to Canterbury (for recent discussion see Bennett *et al* 2010, 328–35).

The importance of the '*Dunstrete*' route in the Roman period was underlined at Monkton by the occurrence of objects directly related to transport. These included an antler cheek piece, while a hipposandal fragment, an iron tyre fragment and two linch pins are more directly linked to draft animals and wheeled vehicles; a horse shoe fragment came from a secure 3rd-century context (Macdonald and Manning 2008; but for a sceptical general view see Crummy 2011, 61).

These types of objects are paralleled in the EKA2 assemblage, amongst which the most striking object is a complete iron tyre (ON 1400) 935mm in diameter from the upper fill of hollow-way 268010 in Zone 12 (Pl 4.31). The phasing of this deposit is not completely secure, but a Roman date seems most likely. Iron objects from Zone 6 included a harness buckle and a probable snaffle bit fragment.

Given the location of the EKA2 sites some use of water transport seems very likely, particularly in view of the proximity of the administrative and market centre at Richborough just across the Wantsum Channel, but direct evidence is completely lacking. As discussed above the width of the Wantsum Channel in the Roman period, and therefore the distance to be crossed by water to reach Richborough, is uncertain, but whatever the truth of the matter Richborough would have been easily accessible by small craft crossing from locations on the north side of the Wantsum Channel, and perhaps particularly from the Ebbsfleet peninsula. It is possible that the latter represented a semi-formal crossing point, perhaps in some way equivalent to that at Sarre at the west end of Thanet.

Burial and other ritual

Recent work in Thanet has produced significant new evidence for Late Iron Age and Roman burial practice, and the EKA2 sites make a substantial contribution to this. Five small cemeteries were examined, one in Zone 10, three in Zone 19 and one in Zone 20, and further small groups or individual burials were encountered elsewhere (for a summary see Table 4.4). For the purposes of the present discussion a minimum of five burials has been taken to define a cemetery, although this is admittedly slightly arbitrary. In the case of the two groups of six burials encountered, however, the close proximity of the burials clearly indicates an understanding on the part of the burying community that the locations in question were suitable for (presumably) repeated ritual activity of this kind. Two groups of four burials each, one at the north end of Zone 6 and one at the south end of Zone 7 (of late Roman and early/middle Roman date respectively), might also be considered as small cemetery groups. In addition it is perhaps arguable that the five burials of early Roman date in Zone 6 formed a single group, but although relatively closely positioned other differences suggest that they formed two groups, one of two burials and one with three. The small burial groups were usually of inhumations, while all the 'cemeteries' except the western one in Zone 19, which contained nine inhumation burials, were of mixed rite. Collectively and in some cases individually they demonstrate considerable variation in details of burial practice within a range that contains no examples of high status burials.

The date of individual burials is obviously one key factor affecting variation in practice. Overall the majority of the burial evidence mirrors the wider chronology of the settlement pattern, concentrating in the Late Iron Age and early to middle Roman periods, with relatively few burials assigned to the later Roman period. The chronology even of some of the relatively clearly-defined cemetery groups was not always very precise, however. The date of scattered individual burials and of fragmentary redeposited human remains is often very unclear indeed, as is their significance in some cases; an issue even in some of the better-defined cemeteries in cases where the human remains only survived in part. Many of the figures used in discussion of the Late Iron Age and Roman burial evidence are therefore only approximate. For the EKA2 project overall, however, some 38 inhumation and 33 cremation burials occurred in the five cemetery groups (these figures include four cremation and four inhumation burials forming part of the main cemetery excavated in Zone 19 recorded in earlier work in 1983–4 (Perkins 1985)), with a further 34 inhumation and perhaps six cremation burials found in smaller groups or individually. These figures exclude some features which were probably specifically related to cemeteries, such as empty graves, deposits of pyre material, or possible 'cenotaph' features, all of which are important for understanding the workings of the cemeteries with which they were associated, but which are not seen as adding to the total of burials. Disarticulated and/or redeposited human remains were found in a minimum of 53 contexts, the great majority of this material being unburnt bone. There was a notable concentration of redeposited bone in Zone 6, where at least 33 contexts contained such bone, albeit typically in very small quantities in each case. Equally notable was the fact that this was all unburnt, cremated bone of any kind being absent here, whether in defined burials or redeposited.

The cemetery at the southern end of Zone 10 was the only one that was clearly defined by broadly contemporary linear features, although few if any of these were necessarily intended primarily for this purpose. The overall area enclosed was 18m east-west and 8m north-south, with an entrance formed by offset ditches at the eastern end. The majority alignment of the eight inhumation burials was roughly north-south, at right angles to the line of the major boundary ditch which defined the southern edge of the cemetery. Most of the inhumation graves were fairly regularly rectangular, as were three further features (not included in the grave count above) which contained no human remains but were certainly grave-like in character. Whether they were unused, served as cenotaphs or had perhaps been robbed is unknown; it seems unlikely that the absence of human bone was simply a consequence of adverse soil conditions here. Two of the three cremation burials in this cemetery lay close to the north-west corner, with a pyre deposit feature between them and a further similar feature (258338) fairly close by. There was only a single case of intercutting features within the cemetery, concerning two of the inhumation graves. Considering the spacing of other features within the cemetery this juxtaposition may have been deliberate, though the result was not the same as the 'stacking' seen in several cases in the Anglo-Saxon cemeteries (see Chap 5). The earlier grave (239260) was notable in containing the remains of an older adult female along with those of two neonates, while the later grave (239266) contained another adult female of broadly similar age, accompanied by a greyware jar dated AD 120–200 (Pl 4.26). Only grave 239260 and one other inhumation burial had no associated dating material of any kind. There is no particular reason to see these burials as significantly

Table 4.4 Numbers of graves or deposits with human bone etc by Zone
(MNI in brackets – usually based on individual contexts)

Zone		*Cemetery*		*Scattered*		*Disarticulated /redeposited*		*Comment, grave numbers etc*
	Group	*Inhum-ation (I)*	*Crem-ation (C)*	*I*	*C*	*I*	*C*	
4 & WP				3(4)	1	3		LIA/ER (227 (WP), 147255 (poss. earlier), 177322)
6	Northern	3(4)						ER (126238, 176106, 260017)
	Far north	4						LR (136191, 207049, 246148, 254020)
				8?		34		(132156, 136101, 136191, 153095, 176031, 278172, 297092, 297120?)
7	Southern	4						?E or MR (150083, 248103, 197017, 297022)
				1	2		1	(267091, 179132C, 271009C) redep C in 267091
10/10a	S centre	8(10) & 3 empty	3 & 3 redep?				2	E–LR cemetery, enclosed (176334, 179276, 182340, 239260, 239266, 239278, 248221, 258342, 42001C, 176311C, 247315C)
11					1		3?	ER (C147141)
13				1?		4		(156146? (neonate))
14						1		Infant
19	Eastern-most	3	3?					E–MR? (126204, 126223 (also C?), 220136, 220117C, 220119C)
	126189 main cemetery	15	24					E–LR (126100, 126331, 126355/P9, 150097, 176342, 176345, 220054, 220060, 220112, 248104, 248107, 248258/P7, 248266, P8, P11A, cremations P4, P5, P6, P10, 126103, 126106, 126110, 126195, 126334. 150100, 153060, 153068, 166077, 166082, 177480, 193051, 220057, 220064, 220072, 220099, 220115, 220129, 248260, 279096, ?cenotaph
	195118 western	9						LIA? (151051, 171194, 205118, 216010, 228050, 257016, 257019, 262044, 278060)
				1				(262062)
20	249089	3	3					MR (182241, 198300, 216094, 215193C, 215195C, 215199C)
				9	1	2		incl groups of 3 and 5 neonates, mostly in SFBs
21						1		Neonate
29					1(3)			E–MR (159009)
TOTAL 8		49(52)	26?	23?(24)	6(8)	45	6?	

KEY: Individual context numbers are graves. P = graves excavated by Perkins (1985) – these are not recorded in the osteological Tables 4.6 and 4.7 (see Appendix 1)

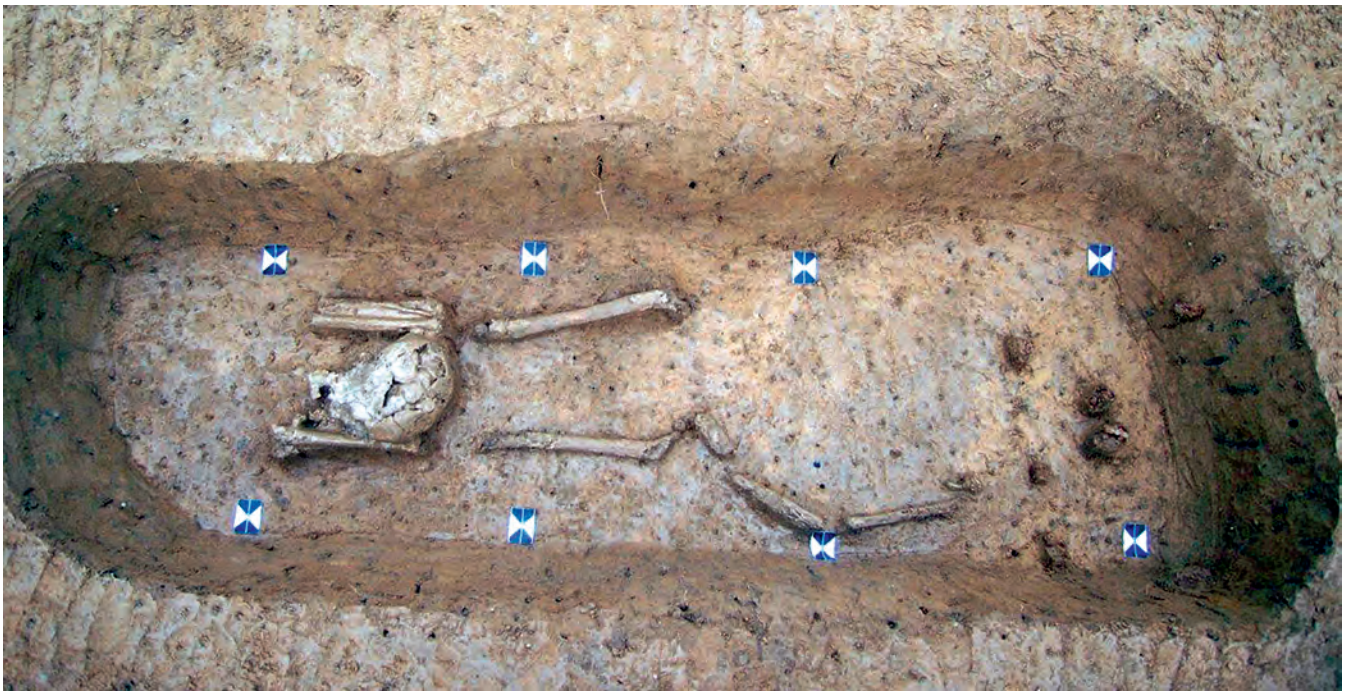
earlier than the rest, although it is possible to speculate that grave 239260 was a primary foundation burial for this cemetery. This possibility apart, however, all the available (ceramic) evidence suggests that use of the cemetery started at some time in the 2nd century and continued through at least to the later 3rd century. The three cremation burials were all urned (and if feature 258338 was in fact another cremation burial it might also have been urned, although only fragments of a vessel were recovered) and two had additional auxiliary vessels. Four of the eight inhumation burials were contained in coffins, and all of these also contained one or two pottery vessels, with two vessels and fragments of glass in a further, uncoffined burial. Grave 179267, the only one to contain the remains of a subadult (apart from the two neonates in grave 239260) produced not only two vessels of Oxfordshire colour-coated ware (one dated after AD 270, making this probably the latest burial in the cemetery), but also a necklace of glass and jet beads (Pl 4.8). The only other notable grave good was a coin of Titus, but this was associated with a later 3rd–4th century vessel in grave 239278 and therefore appears to have been curated for a very long time before deposition; it seems unlikely to have been an accidental

Pl 4.26 Grave 239266, with disturbed burial 239264 from grave 239260 in foreground (Zone 10; view from south)

inclusion within the grave fill (Pl 4.10). Another ceramic variation within this cemetery was represented by the appearance of large parts of Dressel 20 amphora overlying an apparently token cremation deposit (169009) at (or possibly on) the feet of the burial in grave 248221. This individual, a young adult female, had been buried prone, the only example of this rite amongst the EKA2 burials. Decapitation was also very rare; again the sole example was found in the Zone 10 cemetery, the burial of a possible female aged *c* 30–40, associated with a vessel dated AD 130–200 (Pl 4.27).

The four cemeteries spread along the chalk ridge of Landscape 1 in Zones 19 and 20 collectively present a diverse picture of burial practice. None of these was formally enclosed in the way that the Zone 10 cemetery had been, but their relationships to a variety of linear features suggest that the presence of the latter was often a significant factor in cemetery location, a pattern found very widely in Roman Britain. Despite the general lack of other evidence for features delimiting or otherwise marking these cemeteries, most appear to consist of substantially complete groups of burials, three small (two of six burials and one of nine) and the fourth, with a minimum of *c* 39 burials, much the largest of the EKA2 cemeteries. The chronological emphasis of the majority of these burials is, as would be expected in view of the date of the most nearly adjacent settlement features, in the middle Roman period, but there is some variation from this pattern. In particular, cemetery 195118, a group of nine inhumation burials in the western part of Zone 19, is distinctly different in character from the other burial groups and is likely to be earlier.

Cemetery 195118 lay at the northern edge of trackway 193119, assigned a broad Roman date but lacking specific dating evidence and perhaps in origin to be dated earlier (see below). Three of the graves were recorded as cutting the fill of the edge of the trackway, but these



Pl 4.27 Grave 176334 (Zone 10; view from south-west)

relationships appear questionable, particularly if the trackway is correctly dated. As a group the burials of cemetery 195118 contrast markedly with others from EKA2. Eight of the nine individuals were adults, two males and six females, and the ninth, an adolescent (aged 13–15 years) was probably female. The burials show considerable variation, not to say irregularity, of body position. Only three were definite examples of 'typical' supine inhumations; amongst the others, one was crouched, two had the legs flexed to varying degrees and another was laid on the right side. One of the remaining two burials was disturbed and partly redeposited so that its original position cannot be determined, and the last was poorly preserved. There was no evidence for coffins and no ceramic grave goods of any kind, a particularly notable characteristic given the relative frequency of such material (pots were placed in 15 out of 29 of the inhumation burials in the other excavated cemetery groups). By contrast, however, four of the graves in cemetery 195118 contained copper alloy objects: a hollow ring and a small band/collar with male burial 216010 (Fig 4.87, ONs 2427–8), and a hairpin (ON 2433, Fig 4.89), a simple finger-ring (ON 1810, Fig 4.91), and a tiny penannular brooch (Fig 4.92, ON 4633) with female burials 257016, 262044 and 278060 respectively. None of these objects is closely dated. The brooch is unlikely to be later than the 1st century AD and the hairpin could be of that date, but could also be later. The finger-ring is best paralleled in Iron Age contexts, as is the hollow ring (for a recent discussion of this object type see for example, Northover 2011, 461–2). Overall, the objects could indicate that the cemetery was in use over an extended period. The only other dating evidence, apart from the uncertain relationship with trackway 193119, was a sherd of Middle–Late Iron Age pottery from the fill of the disturbed grave 216010. On balance, a shorter period of use in the later Iron Age, perhaps extending into the later 1st century AD, is preferred but cannot be demonstrated with confidence.

The other two small cemetery groups in this landscape each contained three inhumation and three cremation burials. The graves of the group at the east end of Zone 19 were all cut into the fills of hollow-way 193119 and a later hollow-way/trackway 126277. Both of these features were very poorly dated. In the present case, however, there is no doubt about the relationship between the graves and the linear features (in contrast to the situation with cemetery 195118), and here the likely Late Iron Age or very early Roman dating of the burials suggests that the hollow-ways were essentially later prehistoric features. The three inhumation burials were all extended and supine; the individual in east-west grave 126204 was placed in a coffin, while the two south-north burials were not. The coffined burial also produced a circular iron object, most probably a 'traveller', or wheelwright's measuring tool (see craft and industry, above, and Vol 2, Scott, Chap 3). A number of these specialist tools have been found in Late Iron Age or early Roman graves, typically from cremation rather than inhumation burials, including one from Alkham in Kent. A similar copper alloy object from the A2 in north Kent may have had a different function (Scott 2012a, 293–5, with further references).

Inhumation grave 126223 also contained evidence for a cremation burial in an incomplete grog-tempered urn. The relationship between the two features is unclear, but it is perhaps most likely that the cremation burial was cut into the fill of the inhumation grave, though whether this was a deliberate or a fortuitous association is not known. The urn is only broadly dated, probably to the early Roman period. The vessel used as an urn in burial 220119, however, was a pedestal jar, also in grog-tempered fabric, and was certainly of Late Iron Age or very early Roman date. The third cremation burial was unurned. Overall the dating evidence for this cemetery is limited but consistent, and use beyond the end of the 1st century AD at the latest seems unlikely. The six individuals buried here were all adults, two males, two females, a possible female and one of uncertain sex. All were at least 30 years of age and three were older than 45 years while a fourth might have been similarly aged.

While the exact settlement association of this eastern burial group in Zone 19 is uncertain, the identically-sized mixed cemetery 249089 to the west was closely linked with adjacent settlement in sunken-featured buildings. It lay within one part of a system of small enclosures immediately east of the domestic features, although the burials clearly represented a secondary use of part of the enclosure, falling within the period *c* AD 150–250. The three inhumation burials, two situated parallel to the NNE–SSW aligned enclosure ditch and one at right angles to it, were all placed within coffins and the three cremation burials were all urned. Five of the six burials also contained auxiliary vessels, one having two vessels and the others three. The demography of this group contrasted markedly with that of the Zone 19 eastern burial group. In cemetery 249089 only a single possible male was over 45 years of age (this, a cremation, being the only burial with no grave goods). There were two young adults, one male and one female, the latter, a cremation burial, also associated with the cremated remains of an infant. The inhumation burials included an adolescent and an infant of two–three years, and the remaining cremation burial was of a child about five years of age. While a very small sample, this group presents the character of a family unit, although if burials took place over a period of as much as a century the group was clearly very incomplete. It is notable, however, that the burials of six neonates, a group so often missing from the burial record, were located in sunken-featured buildings in the settlement adjacent to the west, so in that respect at least the overall burial sample for this area is unusually complete.

The principal cemetery in Zone 19, cemetery 126189, was larger and more complex than any of the others already discussed. The core area of the cemetery was bisected by a gas pipeline in 1983–4, when four cremation and four inhumation burials were excavated (Perkins 1985, 50, 54–6). The plan given here (Fig 4.53) locates these in relation to the recent excavation evidence as closely as possible, although there is inevitably a degree of uncertainty about this, and the

relevant information is incorporated into this discussion where appropriate. These burials bring the totals for the cemetery to a minimum of 15 inhumation and 24 cremation burials. The cemetery lay north of the probably later prehistoric hollow-way 193119 and its successors and it was probably bounded to the north by ditch 126170 at the northern margin of the excavated area. The date of this feature is not very clear, but it is likely to have been broadly contemporary with at least part of the period of use of the cemetery. An undated ditch terminal, perpendicular to the line of ditch 126170 at the point where the latter disappeared completely beneath the north baulk of the excavated area, extended 4m southwards from the edge of the site and may also have had a role in defining the cemetery since only two cremation burials and one other related feature lay east of it. Ditch 126170 was post-dated by a ditched enclosure (249029) some 10.5m wide internally and perhaps roughly square in plan (its north side, if defined by another ditch, lay beyond the limit of the excavation). This feature may have been significant in the development of the cemetery, but this is not certain. The enclosure ditch, a possible sunken-featured building (126117) placed off-centre within it, and another possible sunken-featured building (217091) cut across the western arm of the ditch, are all assigned to the early Roman period, although the dating evidence for some of these features is limited. Cremation burial 153068 was also placed within the enclosure – approximately in the middle if this is seen as a roughly square feature. It is therefore possible that this location was deliberate and that the original association of enclosure 249029 was with the burial rather than with other features.

Burial 153068 included a casket (it is not clear if the cremated remains were placed in the casket, although in the absence of a cremation urn this seems likely) and burnt bones of a neonatal pig and a small dog. Casket burials are rare but not exceptional in the region; four out of seven burials excavated at Coldswood Road, for example, were of this broad type (Egging Dinwiddy and Schuster 2009, 95–96, 152–5), although none had the distinctive fittings and mounts characteristic of the classic type (*cf* Borrill 1981; see also Philpott 1991, 12) and they might be better characterised as box burials. By contrast, a lock bolt and other fittings at Each End, Ash may suggest the presence of an example in the cemetery there (Hicks 1998, 165, grave set 22, no bone was present in this burial). The Each End burial was of later 2nd century date while the Coldswood Road examples were thought to be Claudio-Neronian. This overall date range is broadly that of this burial type as a whole (Philpott 1991, 13–4). The only example of a decorated casket from the large cemetery at Pepper Hill, Springhead (six further burials there were contained in or incorporated plain wooden boxes) was also of mid-2nd-century date, while an example from Canterbury (*VCH* 1908, 76) is suggested by Philpott to be of late 2nd early 3rd-century date (Philpott 1991, 14). The regional comparanda therefore do not allow the date of burial 153068 to be refined and its relationship to the small enclosure thus remains uncertain. There were no other burials within the enclosure, however, and while further burials were found adjacent to it they did not cluster very close to it in a way that might suggest that the enclosure acted as an important focus for burial, although the general alignment of graves and groups of graves mirrored that of the enclosure. There were small groups of burials to the west and to the east, but none close to the south side of the enclosure. The principal concentration of burials lay just south-east of the enclosure and the majority of the cemetery features occupied a roughly rectangular area 12m wide extending 22m in a SSW direction from the line of ditch 126170. The eastern edge of this block was marked by a line of features including cremation burials, a pyre debris pit and another pit of uncertain function, and there is a distinctly linear character to the position of some of the other cremation burials to the west. The only features outside this block were the three east of ditch 126158 (see above), burial 153068 within enclosure 249029 to the west, and three more cremation burials and a possible inhumation grave (166075) further west again. The significance of a small number of shallow features superficially of grave-like shape is uncertain.

This central cemetery area contained all 15 identified inhumation graves, plus two more probable graves with no human remains, and 18 cremation burials. Other features included a pyre debris pit (239107) at the south-east corner of the block of features, and another pit and a posthole, the latter possibly a grave marker associated with cremation burial 126110. There was relatively limited evidence for intercutting of graves, but a few instances were noted. Inhumation grave 126100 cut two cremation burials, 126103 and 126106, both apparently of 1st-century date, while Perkins' (1985) cremation burial 10 seems to have been in the same location as inhumation grave 176345 containing an infant. The latter is undated, but the cremation burial is probably of mid-2nd-century or later date and was presumably the secondary feature. Inhumation graves 8 and 11, recorded by Perkins, must have intercut, but the relationship was apparently removed by the pipe trench. The inhumation graves were all aligned NNE–SSW on the long axis of the central cemetery area. The only variation from this alignment within this area was seen in feature 176348, a possible grave containing no human remains, which was perpendicular to the basic alignment, as was another feature in the line of features defining the eastern edge of the central cemetery area. One further grave-like feature on the same alignment but placed at the western margin of the cemetery also produced no human remains.

The overall date range of burial in cemetery 126189 extends from the Late Iron Age to the late Roman period, but there is only one grave, inhumation 176342, for which a 4th century date seems fairly certain on the basis of associated grave goods, although a number of unaccompanied inhumation graves could have been of comparable date. This possibility aside, however, none of the other graves need have been later than about the

middle of the 3rd century. Apart from the limited evidence for intercutting noted above the chronology is based mainly on ceramic evidence. In total six inhumation and 15 cremation burials contained pots; grave 176342 also contained copper alloy bracelets, and four cremation burials, only one of which was (probably) ceramically dated, each had a single brooch. Inhumation grave 150097 was the only grave to produce a coin, but this was an as/dupondius only broadly dated to the 1st–mid-3rd century.

The pottery and brooch evidence suggests that at least six or seven cremation burials were of 1st-century date, and that most of these were unlikely to be later than the mid-1st century. These burials all lay within the focal area of the cemetery. The cremation burials with fairly specific mid-2nd-century or later dates tended to be much more widely spread, and included all the furthest flung examples at the eastern and western margins of the cemetery. One of these, grave 166082 (Pl 4.14), contained the latest fairly closely datable vessels (ON 1260 assigned a range of AD 150/180–230 (Monaghan 1987, 48–9, type 1B6) and ON 1258, the urn, dated AD 150–250/300 (*ibid*, 96–7, type 3H2)). Several of the less precisely dated cremation burials (eg, with generic late 1st–2nd- or 2nd-century pottery dates) certainly filled the gap between the earliest and apparently latest burial in spatial terms, and probably chronologically as well. The chronology of the inhumation burials is rather less clear since proportionately fewer contained datable material. Associated pottery was mostly of later 1st–2nd-century date and it is possible that in this case none of the inhumation burials was as early as the broadly mid-1st-century cremation group. It is impossible to demonstrate if there was a continuous sequence of inhumation burial from the later 2nd century up to at least the early 4th – the earliest likely date for the latest dated burial, in grave 176342. The position and alignment of this burial indicate awareness of the location of other (particularly inhumation) graves, however, and therefore suggest continuity of use of the cemetery up to this time.

Despite being substantially larger than the other excavated EKA2 cemeteries, cemetery 126189 is likely to have served only a small community, particularly if it was in use for as much as three centuries, which seems probable. However, the variable date ranges assigned to individual artefact-dated graves, and the uncertain chronology of those graves with no dating of this kind, make it impossible to construct a reliable picture of variation in intensity of use; in particular the undated inhumation burials could belong to any phase. A further notable characteristic of this cemetery, however, which suggests that even this larger group of burials is not a straightforward sample of the burying population, is that its adult population appears heavily weighted towards females. If the identifications of sex indicated in the publication of the earlier work by Perkins (1985) are included, the ratio of females to males is 7:2 for the sexed inhumation burials (1 adult unsexed) and 6:3 for the cremation burials. The 13 unsexed adult cremation burials include all four recovered by Perkins – unsurprisingly given the date of his work. If the 2:1 ratio of females to males was also followed in the unsexed examples this would suggest a quite unusual pattern of burial practice.

An overview of late Iron Age and Roman burial practice

The EKA2 cemeteries and other burials complement the growing body of evidence for a well-established tradition of inhumation burial in the region in the Middle–Late Iron Age (see also Fitzpatrick, Chap 3), further supported by the recent excavation of a cemetery of 29 inhumation burials (and one cremation burial) probably of this date in the Thanet Earth project (Weekes 2010, 358). At Thanet Earth, slightly later burials, mainly of early Roman date, were mostly cremations. The EKA2 evidence may indicate a broadly similar trend, with the western Zone 19 cemetery (195118), consisting only of inhumation burials, perhaps entirely of pre-Roman date, followed across the board by mixed rite cemeteries. There is no reason to believe that either the inhumation or the cremation tradition was totally dominant at any one time during the early and middle Roman periods. Nevertheless, in the principal Zone 19 cemetery (16189) the best-dated early graves, some probably dated to the first half of the 1st century AD, all seem to contain cremation burials. Distinctive characteristics of these, such as the presence of brooches in some, may simply reflect their specific chronology, but it is also possible that they indicate a particular burial tradition. Smaller cemeteries with some similar characteristics consisting solely of cremation burials occur outside Thanet at sites such as Alkham, near Dover (Philp 1991), and Cheriton (Tester and Bing 1949) and Saltwood on HS1 (Booth 2011a, 312–3), both near Folkestone. On HS1 in general, Late Iron Age/early Roman burials from rural contexts were almost exclusively of cremation type (*ibid,* 311–2), although poor preservation conditions in parts of the route might have reduced the chances of survival of inhumations there.

At EKA2 Zone 19 cremation burials dated by associated pottery continued to be deposited in this cemetery at least into the second half of the 2nd century if not rather later. Pottery-dated cremation graves from the other cemeteries all fell within a broad 2nd–3rd-century range. In overall terms, very few graves were dated later than this, but where present they were inhumation burials, and it seems likely that the cremation burial tradition had finally passed out of use in a local context at some time after the mid-3rd century, superseded by inhumation. While less well-represented than cremation in cemetery 16189, there is no clear evidence that inhumation burial was not in use there in the early Roman period, and one (unfortunately undated) burial of this type seems to have been cut by a 2nd century-cremation burial, a sequence apparently also observed in one case each in the Zone 10 and Zone 19 eastern cemeteries. Such associations might perhaps have been

deliberate. In general there was relatively little evidence for random intercutting of graves, and it is likely that graves in all the cemeteries were marked (although there is almost no direct evidence for this) or that, in the case of the smaller cemeteries, periods of use were sufficiently short for graves to survive as obvious mounds.

There was inevitably chronological variation and development in practice in relation to the two principal funerary traditions. The Zone 19 west cemetery (195118) might be seen as growing out of a Middle Iron Age tradition in which crouched or flexed burial was characteristic, the development of extended supine inhumation burial being perhaps a later feature, and typical of inhumations in all the other, later cemeteries, although at least occasional variation was always possible. The Iron Age cemetery in Zone 12, however, consisted principally of extended supine inhumation burials, of which the two dated examples had radiocarbon date ranges of the 4th–3rd centuries cal BC (see Chap 3). Equally, at Mill Hill, Deal the practice of extended inhumation seems to have developed as early as the beginning of the 2nd century BC (Parfitt 1995, 155–6); this was clearly not just a Late Iron Age phenomenon.

Provision of coffins was a common but by no means invariable characteristic of inhumation burial. Ignoring their (unsurprising) absence in cemetery 195118, some 17 out of 29 inhumation graves in the other cemeteries had evidence for coffins, indicated by variable numbers of nails with very occasional traces of a coffin stain. Some of the more widely scattered individual burials were also placed in coffins; these included single individuals in Zone 4 and Zone 20, but it is notable that the only other instances of coffined burials, in Zones 6 and 7, were not isolated but occurred in the small clusters of three or four burials noted in these areas (the numbers of coffined burials in these groups are 1/3, 2/3, 0/4 and 1/4). Although the overall numbers are inadequate for certainty, the association might suggest that such groups, although very small, were considered to include burials of fairly formal character (in any case, dismissal of apparently informal burials as 'casual' is an approach to be treated with caution). An additional sidelight on inhumation burial practice also comes from these groups. Burial 248102 in grave 248103 from the group of four associated graves in Zone 7 was noted as being very constricted, perhaps suggesting that the body was tightly wrapped in a shroud, the only possible instance of this practice noted in the EKA2 burials. Such an identification is plausible but not always straightforward (eg, Duday 2009, 45); some aspects relating to the practice in a British context have been discussed recently (Booth *et al* 2010, 474–6) (Pl 4.6).

The proportion of coffined inhumation burials and of cremation burials contained within urns in the four cemeteries (excluding the early Zone 19 west cemetery) is very closely similar. Nineteen (or possibly 20) of the 33 cremation burials were urned. The practice was almost universal in the small cemeteries, but only just under half of the cremation burials in the main Zone 19 cemetery were treated in this way. This seems to have been in part a chronological characteristic since, as already noted, a number of the earliest graves in the cemetery (as indicated by the presence of brooches of early types) did not contain ceramic containers for the cremated bone, but there were certainly one or two cremation burials with associated goods indicating a 2nd-century date which did not have urns either. Within the range of ceramic containers the most obvious non-standard characteristic is the use of a substantial part of an amphora to contain or cover the cremation burial. This is a relatively rare feature, though more common in Kent than in most other parts of Britain (Philpott 1991, 22–5, 403, fig 4), a pattern that has been reinforced by more recent work. For example, five of the seven cremation burials (a quite exceptional proportion) in the cemetery at Cottington Road, only *c* 200m east of EKA2 Zone 10, were contained within amphorae (Egging Dinwiddy and Schuster 2009, 99–100), and the cemetery at Each End, Ash included another example (Hicks 1998, 166). The vessels used were invariably globular olive oil containers of Dressel form 20. Parts of three such vessels were found in EKA2 burial contexts, one in Zone 10 and two in the main Zone 19 cemetery (126189). In Zone 10 large amphora sherds were used to cover cremated remains apparently placed over the feet of the prone inhumation in grave 248221 (Pl 4.28). In Zone 19 the upper body of another vessel, with the rim missing and the handles deliberately removed, came from grave 153060. This vessel had been inverted in the grave, so presumably its base had already been removed when it was put in position and the samian ware accessory vessel placed inside it. More conventionally, the amphora in grave 6 recovered in 1984 was placed upright and contained a sequence of fill deposits including the cremated bone. Here the rim and handles were again missing (Perkins 1985, 54), but it is not clear

Pl 4.28 Grave 248221 (Zone 10; view from north)

if this was a deliberate feature, as is quite typical (eg, Philpott 1991, 23), or a consequence of post-depositional truncation, although the former may be more likely. At Cottington Road deliberate rather than accidental removal of the upper parts of the amphorae was thought likely in every case (Egging Dinwiddy and Schuster 2009, 100). The Weatherlees-Margate-Broadstairs pipeline provides particularly striking evidence, from the adjacent sites of Cottington Road and Coldswood Road, of potential differences in the provision of containers for cremation burials, which may reflect both chronological and social distinctions between the two cemeteries, although the former explanation was preferred by the excavators (*ibid*, 100).

The reasons for lack of an obvious container for cremation and inhumation burials are therefore probably complex, and while it is possible that a higher proportion of 1st-century burials did not have a container, the difference in the level of such provision between the early and middle Roman periods does not seem to have been great. In the case of cremated human remains non-ceramic containers were certainly used. Most obvious is the casket with copper alloy fittings in grave 153068. Bags of fabric or leather could also have been used, and it is quite likely that one of the functions of the brooches in the early cremation graves was to act as fasteners for such containers.

In terms of the provision of grave goods the cremation burials present a more complex picture than the inhumations. Objects placed on the pyre have to be considered separately from those placed within the grave, although the evidence for the former was not particularly abundant and one of the principal categories of material, animal remains, were used in both contexts, as pyre goods and as subsequent additions to the grave. With one exception in Zone 10 (a grave with burnt bones of small bird and sheep/goat) cremated animal remains were found only in the main Zone 19 cemetery, occurring in at least eight of the 24 cremation burials (where very small quantities of material, typically less than 1g, were involved their significance was considered uncertain and they have generally not been included here). Small bird, domestic fowl, sheep/goat, pig (usually very young) and small dog were all encountered in Zone 19 in various combinations, with small bird, sheep/goat and pig all appearing four times (though not all in the same graves). The most diverse assemblage was found in amphora burial 153060, which contained bones of small bird, pig, sheep/goat and probably dog as well. At the nearby Coldswood Road and Cottington Road cemeteries on the Weatherlees-Margate-Broadstairs pipeline project pyre goods regularly included medium mammal and bird, but apparently confined almost entirely to young pig and domestic fowl where identifiable more closely (Egging Dinwiddy and Schuster 2009, 152–159).

The identification of other types of pyre goods is less certain; fragmentary iron and copper alloy objects may belong to this category, but the only fairly clear instances are the occurrence of two copper alloy nails in cremation burial 5 of cemetery 126189 and of 'many iron fragments' mixed with the calcined bone in amphora burial 6 of the same cemetery (Perkins 1985, 54). Other (iron) nails and fitting fragments may have been related to objects placed in graves alongside the cremated remains. This seems fairly clear in grave 10 of cemetery 126189 where iron fragments of an apparently *in situ* object were considered to be possible bucket mounts (*ibid*, 56), but the interpretation of varying numbers of nail fragments in a further six graves in this cemetery is less certain; some of these could have been remnants of objects placed on the pyre (or even have come from material reused in the pyre), but in the case of grave 177480 might perhaps have derived from a box placed in the grave alongside the urn. Hobnails occurred in this and one other burial in cemetery 126189, the relatively small numbers of nails present suggesting that they derived from shoes placed in the pyre rather than deposited complete in the grave. The only metal grave goods in cremation burials which were clearly not placed in the pyre were brooches, which occurred in four graves, all from cemetery 126189. Three of these were early types, none necessarily later than the mid-1st century AD, while the fourth, an enamelled 'shoe-sole' plate brooch, is more broadly dated from the late 1st to late 2nd/early 3rd century.

The repertoire of grave goods in cremation cemeteries was completed by unburnt animal remains, potentially complementing the material placed on the pyres, although the two categories only overlapped for certain in one instance in cemetery 126189, where a pig skull was associated with cremated human and other animal remains in Late Iron Age–early Roman urned burial 220057. Unburnt pig bone was present in one other grave, and two more cremation burials contained unburnt animal bone not identified to species. Localised variation in burial practice is seen even with relation to this material, however. Interestingly, unburnt animal remains do not seem to have been placed as grave goods in the Coldswood Road and Cottington Road cemeteries. In the much larger sample from Pepper Hill, Springhead, it was observed that unburnt animal bone was only recovered from 2nd-century cremation graves and not from earlier features of this type (Biddulph 2006; Booth 2011a, 323) and this was linked to potential changes in perception of the nature of the journey to the afterlife, also associated with aspects of the provision of footwear. The EKA2 evidence suggests that some of the people of Roman Thanet had a different view of the significance of animal remains, and the spatial variation in the occurrence of footwear is also interesting – in particular its absence from inhumation burials in the main cemetery in Zone 19 is notable.

The inhumation burials produced a relatively limited range of grave goods in addition to pottery, although the variety of small copper alloy objects in the Zone 19 western cemetery has been noted above. In Zone 10 non-ceramic grave goods comprised an old coin in one grave, glass vessel fragments in another and an elaborate bead necklace in a third (179267; Pl 4.8). The necklace was associated with the burial of a child about four–five

years old and is characteristic of the sort of object that often has 'life-stage' associations, with the presumption that the child was female (eg, Cool 2010, 307; Gowland 2001; see for example, Gowland 2006 for general issues). It is notable that the only beads from the cemetery at Cottington Road were from the mid-2nd–3rd century burial of a child estimated to be about 3 years of age (Egging Dinwiddy and Schuster 2009, 159–60). The complete upper foreleg of a pig placed in a greyware dish in grave 182340 is also noteworthy amongst the grave goods in Zone 10 (Pl 4.9). The iron disc 'traveller' discussed above was the only grave good in the small eastern cemetery in Zone 19 and if correctly understood may have had specific connotations in respect of the identity of the deceased. Equally, three copper alloy bracelets from late Roman grave 176342 in the main Zone 19 cemetery were characteristic objects buried with (but not worn by) a female 30–35 years of age (Pl 4.29). A probably 1st–2nd-century coin in grave 150097 may perhaps have been an old object when deposited, like the example in Zone 10. Either way, these were the only two coins from EKA2 graves. The significance of various iron plate, strip and nail fragments and joiner's dogs is uncertain, but most if not all of these probably related to coffins and are not considered further here. The only potentially notable object associated with an inhumation grave not from the main cemeteries was a late Roman iron buckle in grave 246148 in Zone 6, but this was a D-shaped type associated with harness and its significance is therefore unclear, although it is conceivable that it had been reused as a piece of personal equipment, perhaps providing a parallel for the kidney-shaped buckle found in a late Roman grave at Cottington Road (Egging Dinwiddy and Schuster 2009, 160–1 no. 722).

Matters of dress and adornment (as opposed to provision of other items) show only a moderate degree of overlap between cremation and inhumation burial traditions, although to see these traditions as starkly contrasted and potentially oppositional would probably be a mistake. Brooches have already been mentioned as occurring exclusively in cremation burials. Similarly, beads were found only with inhumation burials, but as there was only one relevant example the pattern is hardly well-defined. There are single examples of bracelets in inhumation and cremation burials, but cremation burial 252067 presents an unusual case with three bracelets having been placed on top of the bone within the urn prior to burial. Such items of personal adornment would more usually be worn by the deceased for cremation and their inclusion in this way is not a characteristic of the rite in the Roman period. Nailed footwear was found in both traditions, but its occurrence was patchy – in three inhumations and one cremation burial in the Zone 10 cemetery, in two cremation burials in the main Zone 19 cemetery and in a single inhumation burial in Zone 20. The evidence from nearby Coldswood Road and Cottington Road cemeteries is equally limited – one

Pl 4.29 Detail of grave 176342 (Zone 19; view from east)

example of nailed footwear (perhaps a pyre good) from an amphora (cremation) burial at the former site and one middle and one late Roman occurrence in inhumation burials at the latter.

The occurrence of apparently scattered burials has been referred to above. These were presumably positioned at the margins of contemporary settlement, although the lack of precise dating for many settlement-related features as well as graves makes this difficult to judge in some cases. The most complex situation is in Zone 6, where six inhumation burials were assigned to the early Roman period, four were of middle Roman date and four were late Roman. Generally these follow the rule of placement in marginal locations, with five of the six early Roman burials, for example, lying in and just outside the most northerly of the enclosures assigned to this period (perhaps in two separate groups, as indicated above). Middle Roman grave 132156 was partly cut into the fill of early Roman ditch 170032, while burials 176031, 278172 and 136099 were all entirely within earlier or roughly contemporary ditches, though all seem to have been contained within defined cuts rather than just forming part of a sequence of deposition within the ditches. Bone survival in feature 136099 was minimal, but the suggestion that this was intended to be a formal burial is supported by the presence of a largely complete Drag 31R bowl (ON 670, Vol 2, Fig 9.9, no. 82). By contrast with the early and middle Roman pattern, however, the late Roman burials in Zone 6 lay a considerable distance north of contemporary occupation-related features.

The small groups and individual burials from Zone 6 just discussed included two neonates. Treatment of neonates was very varied across the EKA2 project area. Of the ten Zone 6 examples, two survived as relatively intact burials, one a discrete feature and the other cut into a ditch fill (early Roman grave 297092 and middle Roman grave 278172 respectively). The remainder appeared to be less well-defined, occurring in ditches (three), pits (two) and sunken-featured building contexts (three), but it is often difficult to tell if the incomplete nature of the remains reflects redeposition within the Roman period, or loss as a result of later taphonomic and/or chemical processes. If the remains were simply redeposited there is nothing that would distinguish them from other human remains that had been subject to similar processes of disturbance, whether deliberate or accidental. Formal burial of neonates is indicated in a number of cases elsewhere within the EKA2 area. Fragmentary remains of two individuals occurred in grave 239260 in the cemetery in Zone 10, where they were associated with an older adult female, and grave 220060 in the main Zone 19 cemetery contained the remains of a baby approximately three months old. Elsewhere the remains of neonates were often very fragmentary, suggesting redeposition, as for example in Zone 13 where small fragments of one individual and rather more substantial remains of a second occurred in pit 156146, and a further fragment was recovered from a sunken-featured building context. A significantly different pattern, however, occurred in Zone 20, where the burials of six neonates were directly associated with sunken-featured buildings, one with structure 249085, two with structure 249049 and three (plus a further fragment) with structure 249081. Only parts of all of these burials were present – they ranged from *c* 15%–65% complete, but most are sufficiently well-represented to suggest that the remains recovered were probably in the original place of burial. Most were located at or close to the edges of the structures. In some cases, however, it is difficult to determine the chronology of the burials relative to that of the use of the structures. The three examples associated with sunken-featured building 249081 were all in features cut into the fill of the structure and therefore post-date its use. The burial in sunken-featured building 249085 was placed in a larger pit cut into the base of the structure, perhaps related to a secondary phase of its use, the burial being potentially contemporary with this use. The co-mingled remains of the two neonates in sunken-featured building 249049 were also located on the base of that structure, but no cut containing them was identified, and on the assumption that the remains had been placed in a dug feature this is likely to have cut the fill of the structure and so post-dated its use. While the placement of neonates in relation to these structures thus seems to have been deliberate and the association therefore presumably significant, its significance remains uncertain. The burials are almost the opposite of foundation deposits which sometimes involve infants – but whether they represent formal acts of closure is speculative, as is any link with the fragments of a Dea Nutrix pipeclay figurine from sunken-featured building 249083 (see below).

Non-burial activity

Evidence for religious and ritual practice of Roman date on EKA2 outside the sphere of burial is strictly limited. No specific foci of religious activity have been identified that can be considered comparable to the small shrine in the settlement at Monkton (Hicks 2008, 102, 107–8). Objects with a relatively unambiguous religious association appear to have been confined to fragments of imported pipeclay figurines, found in Zone 6 and Zone 20 (see Vol 2, Nelson Chap 7). The single Zone 6 fragment was probably part of a Venus figurine and its context, an upper fill of a large pit or possible well (269061) assigned to the middle Roman period, seems to have been one of rubbish disposal. The three fragments from Zone 20 were all from late Roman sunken-featured building 249083 and almost certainly derived from the same piece, a 'Dea Nutrix' figure seated in a wicker chair. Nelson suggests that this piece might indicate the presence of a household shrine. This may be so, but if the construction as well as disuse and infilling of building 249083 is assigned to the late Roman period (broadly after the middle of the 3rd century) the object would probably have been at least 100 years old by the time it was placed within any shrine in the structure. This is not impossible, but if correct

sheds an interesting light on continuity of religious practice within a day to day context, always assuming that the figurine had retained its original significance. The Dea Nutrix is considerably less common than the Venus figurine type, but both have a strong south-eastern emphasis to their distribution, and the Dea Nutrix is quite well represented at Canterbury and elsewhere in Kent (Jenkins 1995, 1180); there are several more recent examples of the Venus, if not of the Dea Nutrix type, from Kent.

Beyond these pieces, however, clear evidence for routine ritual activity appears to be almost absent. A variety of special or placed deposits might have been anticipated in almost any of the main foci of occupation, but were scarce. Two associated bone groups (ABGs) of animal bone were identified in Zone 6 and two related ones in Zone 14. The Zone 6 examples were an articulated hind leg of a horse from a Late Iron Age/early Roman pit (315038) and an incomplete skeleton of an adult dog from the upper fill of middle Roman ditch (170140). Reasons for the incompleteness of the latter are unclear and its significance is therefore uncertain; it cannot necessarily be regarded as a specially placed deposit, whereas the horse limb, apparently unaccompanied by routine domestic rubbish, could be seen in this way. A slightly different situation was observed in Zone 14 where the basal fill of ditch 174191 (part of feature 159244) produced the skeletons of a cat and a dog, plus a few fragments of bone from a different dog. As with the dog burial in Zone 6, bones from most body parts of the two main animals were present but some significant skeletal elements were missing, suggesting that the carcasses had been disturbed since their deposition (rather than simply indicating incomplete recovery of the bones). It is again unclear if ritual deposition, for whatever purpose, is a valid interpretation of this material, or whether other explanations involving disposal of incomplete carcases (although there was, for example, no evidence of gnawing on any of the surviving bones) are also possible. Further unusual deposits involving other types of material were either not identified or were, perhaps, genuinely absent.

People and society

The human remains (see Vol 2, McKinley and Egging Dinwiddy, Chap 13, on which the following section draws closely) provide a sample of some 72 inhumed and 33 cremated individuals (ignoring those represented by disarticulated material, at least some of which in any case will have derived from pre-Roman burials), but variable preservation reduces the number of individuals that provide useful demographic information. The cremated individuals included five subadults or younger, ranging from foetal to teenage, two uncertain subadult/adult individuals (over 15 years of age) and 26 adults, amongst which four males and 15 females were identified. The 72 inhumed individuals comprise some 30 certain or probable subadults and 42 adults. Exactly half of the subadults and younger individuals were neonates or very small infants up to six months of age, with the remainder distributed fairly evenly through age ranges up to 12–15, except for one individual who could only be aged as over 13 years and might possibly have been adult. The adults included 22 males and probable/possible males and 18 females and probable/possible females. Assigned adult age ranges were not always closely defined and frequently overlapped, so the overall age profile is not completely clear. Six individuals were not closely aged (although one of these was over 25 years of age). A minimum of five (two male and three female) individuals fell in a young adult (20–30 years old) category. However, most adults fell within the middle and older adult ranges, with 40.5% in the *c* 35–45 year range, and 31% in the over *c* 45 year category. Adult female deaths peaked slightly in the *c* 35–45 year group.

The totals are too small for detailed analysis in terms of age and sex to be very meaningful. Overall, 42.8% of the adult inhumations were of females, 52.4% males and 4.8% unsexed, but addition of the data from sexed immature individuals gives a more balanced sample: 30.6% female, 33.3% male and 36.1% unsexed. By contrast, a substantial majority of the cremated adult individuals were female (57.7%), as opposed to only 15.4% males, but the unsexed proportion was substantial (26.9%) and could have redressed the balance significantly. Immature individuals constituted a much smaller proportion of the cremation than of the inhumation burials (*c* 15% as opposed to *c* 40%).

Stature was estimated for 24 Roman adults (11 males and 13 females), from burials of all phases. The overall average male stature is consistently greater than the national average figure for the period (1.69m) given by Roberts and Cox (2003, 163), and the late Roman males from the nearby Cottington Road cemetery (McKinley 2009a, 9), and is particularly marked in the small late Roman phase group, in which males had an average height of 1.77m. The males from Zones 6 and 20 were generally taller, whilst an assortment of statures was calculated for the males from Zones 10 and 19. The average female stature is marginally greater than the 1.59m average for the period (Roberts and Cox 2003, 163). In contrast to the males, however, the female average stature generally decreased over time (from 1.67m in the early phase to 1.63m in the early–middle phase, and to 1.56m in the middle–late Roman phase), but the single late Roman female stature calculated was 1.63m. The greatest range of female statures was seen in the material from Zone 19, which includes both the minimum and maximum estimates. The more diverse stature ranges observed in Zone 19 for both males and females might suggest that the burials there were drawn from a more varied population than those from other zones.

Indicators of general health levels include dental disease patterns. These suggest a broadly similar level of dental hygiene to that seen in other Roman sites (*cf* Roberts and Cox 2003) and in the later prehistoric periods for EKA2, though compared to the latter there is a drop in calculus rates and an increase in the

incidence of caries. These changes may reflect a change in diet to one that is perhaps more 'self-cleaning', but includes more refined carbohydrates and sugars. Diet also seems to be the most likely cause of the higher rates of caries (and consequent destructive lesions) observed at EKA2 and local sites compared to other Roman sites.

The incidence and character of joint disease provide further insight into general health. Lesions were identified in the joints of at least 25 spines (out of 30 recorded, occurring in 93.3% of male and 73.3% of female spines) and in the extra-spinal joints of 24 adults (57.1%), including 14 males (63.6%) and 10 females (55.6%). Slight to moderate degenerative disc disease was seen in from two to 11 vertebrae in 17 spines (56.7%); 10 male (66.7%) and seven female (46.7%). As is often the case (Rogers and Waldron 1995, 27), the most commonly affected vertebrae are the fifth and sixth cervical, followed by the lower lumbar region. A similar pattern is seen in both sexes, with the fifth cervical vertebra particularly affected in the females. The condition is strongly linked to age, with the majority of cases seen in middle and older adults (ie, over 35 years), though one male and three females may have been as young as 30 years of age. Lesions indicative of osteoarthritis were seen in 13 adult spines (43.3% of recorded examples), comprising eight males and five females (53.3% and 33.3%), and in from one to eight extra-spinal joints of nine adults (21.4%); five males (22.7%) and four females (22.2%). These developments are also clearly age related. It is suggested that the EKA2 Roman population had relatively physically demanding lifestyles compared to the period average, though apparently not as strenuous as indicated for the EKA2 Iron Age population. The varying male and female distribution patterns and rates may indicate gender-determined divisions of activities, and/or the way in which activities were undertaken.

A different view of life styles is provided by the evidence for traumatic injury. This was seen in 15 adults (35.7% adults; CPR 20.8%), consisting of seven males (31.8%) and eight females (44.4%) (Vol 2, Table 13.15), a crude prevalence rate (CPR) twice that recorded as the period average by Roberts and Cox (2003, 151). These injuries included weapon trauma and a variety of fractures. The latter were proportionally much more common in females than males, a reversal of the commonly observed pattern. Fractures in females were recorded in the vertebrae (compression and posterior breaks), ribs, knees, ankles and feet. One woman (176343) had mid-shaft fractures of both ulnae, neither of which had united (Vol 2, Pl 13.22). Fractures in the forearm are most commonly the result of a fall onto the hands, or of a direct impact, as with a parry fracture. In the males fractures are predominantly located in the thorax (including a clay-shoveller's fracture), though examples are present in a knee and an ankle. The fractures were mainly of types associated with slips, trips and falls, accidents and heavy labour associated with everyday life, but there is clear evidence for interpersonal violence in the males (see below), and potentially in one of the females (the ulna (parry?) fractures in the individual from grave 176342).

Certain and possible weapon injuries were identified in four males – a very high proportion (18.2% of males) compared to the national pattern (Roberts and Cox 2003, 158, table 3.29, giving a CPR of 0.3% of all adults). These included sharp blade cuts and a 'punched-out' wound to the skull of male 262061, an isolated burial in an early Roman ditch in Zone 19 (Vol 2, Pl 13.20), and a sharp blade injury to fresh bone in the fourth cervical vertebra of older male 258344 (Vol 2, Pl 13.21). In both cases the injuries were peri-mortem and may well have been the cause of death. In the latter instance the victim's head must have been held back to its most extreme position, allowing a sharp, thin blade to be thrust up and back from the right side. A further injury, an oval lesion on the left side of the left orbit of male 205120 in the small Late Iron Age western cemetery in Zone 19, may have resulted from blunt force trauma, or perhaps a glancing blow from a sharp weapon, although a localised infection of the overlying tissues is also a possible cause.

The fourth example of weapon trauma was in skeleton 239281, of an older male who had a healed wound caused by a heavy blow to the skull from a weapon with a triangular point, which stopped short of penetrating the cranial cavity (Vol 2, Pl 13.19). In addition to the wound this man had a rare instance of a transverse fracture of the manubrium (the upper portion of the breastbone) – a type of fracture nowadays almost always the result of high impact trauma – and two fractured ribs, plus a forcefully injured mandible and possible nasal cartilage damage. Overall he appears to have been subject to one or more episodes of violence and severe trauma, at least one of which involved an attack from an armed opponent. It is clear from the degree of healing and remodelling that the event or events took place long before death. In addition, his spine had classic evidence of DISH (diffuse idiopathic skeletal hyperostosis) (Aufderheide and Rodríguez-Martín 1998, 97–9), a condition often associated with a rich diet (eg, Roberts and Cox 2003, 138–9). This individual was one of two burials in the Zone 10 cemetery dated by associated artefacts to the later Roman period. He was quite tall (at 1.77m, well above the national mean, but only of average stature in the small late Roman group from EKA2 – see above). His grave (239278) was the deepest of all those of Roman date recorded on EKA2 (the only one to exceed 1m in depth; Pl 4.10) and, although the grave goods were not particularly remarkable, this does therefore seem to have been a burial of some importance. It is noteworthy that the burial immediately to the north, also unusually deep (0.9m), was of one of the individuals with peri-mortem weapon trauma (258344). This grave (258342) was not dated independently and so was assigned to the early–middle Roman phase of the majority of burials in the cemetery. It is possible, in view of some of the similarities in character between its occupant and the adjacent late Roman individual 239281, that the two were closer in date than previously thought.

Assessment of the character of society at a level beyond consideration of particular individuals would ideally be based on a dataset in which the evidence of settlements and their related cemeteries was clearly associated and equally balanced. The linear character of the EKA2 project precludes such an assessment, although hints of settlement and cemetery links are present in places. These, however, involve two of the smaller cemeteries, in Zones 10 and 20, which seem fairly certain to have been related to closely adjacent settlement. In both cases the settlements concerned include one or more sunken-featured buildings, and an agricultural function is suggested for the Zone 10 settlement by the presence of a four-post structure within the same enclosure as one of the sunken-featured buildings. In this instance, however, the dating evidence for the structures is confined to the early Roman period, while use of the adjacent cemetery continued at least up to the end of the 3rd century; the association of settlement and cemetery is therefore not straightforward. The location of settlement from which the later Zone 10 burials derived may have lain close by, perhaps just to the south or east, but this is not certain. In Zone 20 a direct association between the small burial group and the sunken-featured buildings in the adjacent plot to the west seems almost certain, but the numbers of burials are small. In every case, including the largest cemetery (126189) in Zone 19 there are characteristics which indicate degrees of selection. The typical underrepresentation of infants and young children, so characteristic of many cemeteries, is the most obvious, but the Zone 20 burials are exceptional in this regard and perhaps come closest to representing a complete spectrum of the overall burial population of Roman Britain. The overall number of burials here is so small, however, that they may suggest either relatively short term occupation or only part, perhaps a single family group, of the small community living in this area. Issues of chronology are even more acute in the Zone 10 and main Zone 19 cemeteries, as discussed above. In the former case the size of the community involved, allowing for the fact that neonates and perhaps some small children were probably buried elsewhere, seems to have been very small considering the potential date range of the burials here. Again, a degree of selectivity may be involved, but the criteria on which this could have been based are unknown. A clearer-cut but more perplexing situation is apparent in Zone 19, where the main cemetery demonstrates an unusual imbalance in the numbers of the sexes represented, with a large preponderance of females amongst the individuals whose sex could be determined. The reasons for this are quite unclear, as, unfortunately is the settlement association. Despite relative proximity, the position of the cemetery does not seem to have deliberately referenced the trackway(s) to the south, earlier in origin but probably still in some sort of use when the cemetery was being established. It is most likely that associated settlement lay to the north, but its character and distance from the cemetery site are not known, although the nature of the burials themselves suggests a generally lower-status population not significantly different from those using the other burial locations encountered in EKA2. If cemetery 126189 as excavated was fairly complete, as is possible, then it seems clear that other members of this ostensibly fairly typical rural community should have been buried elsewhere, but whether in a closely adjacent plot (for example just to the north) or somewhere else completely, cannot be known on present evidence. If, however, the cemetery demographic is taken at face value it might suggest a community or group of small associated communities with some unusual characteristics. Not only are males heavily underrepresented in the cemetery, but those that are present fall almost entirely into a fairly tight 35–50 year old age bracket, so it is the young men who are absent. Is it possible that this absence is a consequence of recruitment to the nearby and influential military, a picture that might, equally speculatively, involve two of the male burials in the Zone 10 cemetery including the individual with multiple injuries discussed above?

A wider view

The gateway to Britain?

The long term role of Thanet as a point of contact with the Continent has been discussed frequently (Allen 2012 for a recent example) and is summarised above (Fitzpatrick, Chap 3). Connections in the later Iron Age were based on a combination of trade and social relations, probably closely linked. These patterns were disrupted, at least temporarily, by the Caesarean expeditions of 55 and 54 BC, as a result of which more formal political links with the Roman world were probably put in place (eg, Creighton 2000; 2006). The extent to which earlier patterns of contact resumed or were reconfigured as a result may be questionable. For Kent generally, assessment is based principally on coin and pottery evidence and this evidence supports a picture of intensive activity in the 1st century AD prior to the Claudian conquest (eg, Holman 2005a; Millett 2007, 145), with significant Iron Age coin assemblages deriving from several sites in East Kent suggesting the importance of control of continental trade in this area (Holman 2005a, 43). The particular situation at EKA2 Zone 6 may have been different, since the characteristic later coins are missing here, an absence which may reflect developments specific to this site rather than the more general picture in Thanet and beyond.

The consequence of the Claudian invasion was to superimpose a new and much more immediately dominant structure on local societies. Whatever mechanisms of tribute payment to local leaders had existed in the pre-Conquest period, these were now superseded by the direct requirements of taxation and requisition of supplies for the military. In the short term, at least, the impacts of these requirements will have been felt particularly heavily in East Kent. By the later 1st century, however, with the focus of military attention fixed much further away, more stable social and economic patterns may have been re-established, but

the extent to which the forms of contact with the Continent reflected those of the pre-Conquest period is again unclear. In terms of trade it seems almost certain that Richborough, as a major port, will have been a specific focus for trade routes. It was certainly the formal practical and symbolic entry point to Britain, as is well known. With relation to Thanet it may have become the only significant point of entry for imported goods – and the point of exit for anything traded in return. As discussed above, the range of imported material on the EKA2 sites, largely confined to pottery by the nature of the archaeological evidence, does not appear unusual in regional terms. There is certainly no suggestion that these sites enjoyed favoured access to imported materials (the suggestion (Philpott 1991, 25) that the frequency of amphora burials in Kent reflected the ready availability of these vessels because of trade connections, does not convince); there are many possible explanations for the relative absence of imported finds, from straightforward questions of economic status to possible conscious rejection of 'Roman' goods, although the apparently 'normal' profile of the variety of what is seen does not suggest that the latter was a factor.

Did proximity to Richborough increase the likelihood that contacts not of a directly economic kind had any influence on the inhabitants of Thanet? We may presume that the town had a mixed population, potentially with social as well as economic consequences for the surrounding area, but again evidence for this is not easy to see. The development of the villa at Minster, with the main house built towards the end of the 1st century (Parfitt *et al* 2009, 332; note that Moody (2008, 145) suggests a date before AD 70) is in line with other developments in the county and does not represent an unusually early appearance of this type of architecture. It is conceivable that building form in lower status settlements, specifically the distinctive sunken-featured buildings, might reflect continental connections. The marked concentration of this distinctive building type in Thanet might, on the basis that an indigenous structural type would not be expected to have such a limited distribution, suggest introduction from adjacent regions across the English Channel, but present evidence (see above) does not appear to provide any support for this.

The nature of rural settlement in Kent – villa estates and other site types

The EKA2 work, together with that of other recent projects, of which Thanet Earth is the most important, not least because of its scale, has made a significant contribution to understanding of the nature of rural settlement on Thanet. An earlier view (Perkins 2001a) identified as many as 17 certain or potential villa sites (out of a list of 21 sites mapped as 'major buildings'), with the assumption that further sites of this type were waiting to be found in parts of the island where there were no known examples (*ibid*, 48). The implication is that these would have formed a wide-ranging network of estates to which other types of settlement would have belonged. That such a network existed is based on a particular view of the nature of Roman society, the validity of which is uncertain. In addition, Millett (2007, 151) has questioned the assumption that villas were necessarily the centres of agricultural estates, but patterns of land tenure cannot usually be constructed from archaeological evidence alone and as far as Thanet is concerned this debate is unlikely to be progressed in the near future. Moody (2008, 143–9) has taken a more cautious view than Perkins, and identifies six villas or possible villas on Thanet, plus other buildings (*ibid*, 140, fig 84). Of these, only that at Minster has good archaeological evidence for aspects of the villa complex beyond the main house. In terms of identifying locations of substantial Roman buildings it is clear from the EKA2 evidence that the presence of ceramic building material is not on its own a reliable guide to the existence of such buildings. In addition the Zone 6 evidence strongly suggests that, notwithstanding their stone foundations, the rectilinear buildings from immediately adjacent areas relate to that settlement context and need not necessarily have high status settlement associations. Unfortunately, the question of how common such buildings might have been, compared to the frequent sunken-featured buildings, cannot be answered. Issues of preservation clearly favour identification of the latter, but it is possible that some particular characteristic of the Zone 6 settlement resulted in the appearance there of what may (preservation problems aside) have been a relatively uncommon building type alongside the sunken-featured buildings.

Villas may have been at the head of a local settlement-type hierarchy, but a variety of other settlement types was also present. Monkton can be defined as a minor nucleated/roadside settlement, on present evidence perhaps the only one of this type on the island. Such a site presumably had at least a local market function, but whether it fulfilled this role for the whole island is unknown; the total area of Thanet is not large and if the broad definition of local centres suggested by Hingley (1989, 111–114) is followed such sites might be anticipated at distances of 10–14km. On this basis, Monkton would have been accessible from much of Thanet, though the existence of another local centre might be anticipated towards the east end of the island. It is not clear if major centres of Iron Age activity such as that at North Foreland (eg, Holman 2005a, 18–20; Moody 2008, 118–120, 131) retained the same significance in the Roman period, but discoveries in the Bishop's Avenue area of Broadstairs suggest that this is possible (Moody 2007). The EKA2 Zone 19 and 20 settlements, while broadly similar to the Monkton site in character, and in a similar setting in terms of topography and relation to a Roman routeway, appear more diffuse. If taken together with Monkton, however, these sites suggest a straggling linear arrangement of a form not readily paralleled in the region, perhaps principally because of the absence (particularly at Monkton) of a framework of enclosures defining component settlement units. Enclosed rural settlements certainly were present,

however, being identified, for example by Taylor (2007, 24–5, fig 4.2) as better represented in Thanet and elsewhere in East Kent than in the rest of the county, although rectangular enclosures here can also be of Late Iron Age origin (Moody 2008, 134). The complex of enclosures and trackways to the north at Monkton Road Farm (eg, Rady 2009, 12) may be typical. Such sites could consist of single farmsteads, perhaps of multiple phases, or more complex units. The Zone 6 settlement appears to be of the latter type, perhaps combining several separate agricultural units, but whether or not this was a typical arrangement is uncertain. Although ditched enclosures can be defined here, these features are rarely substantial. One characteristic that might have given a special character to the Zone 6 settlement, however, is its possible status as the focus of a crossing point of the Wantsum Channel linking Thanet directly with the major centre of Richborough.

Elsewhere within EKA2, complex arrangements of trackways and enclosures are encountered in Zones 10, 11 and 12, but their interpretation in terms of settlement is less clear. These sites are closely spaced, but not sufficiently close to be seen as parts of the same settlement, a view that may be supported by the existence of separate cemeteries in Zone 10 and at nearby Cottington Road. Rather, they indicate intensive use of Landscape 2, particularly between Sevenscore and Cottington Hill, and complement the contrasting settlement patterns (at least as revealed in the EKA2 sample) of Landscapes 1 and 3. Such a concentration of activity was not universal on Thanet, as indicated by the relatively low density of Roman features within the Thanet Earth project area, although this plateau terrain might have been characterised by a rather different settlement pattern represented by more concentrated groups of farmsteads, perhaps such as that at Monkton Road Farm mentioned above.

Definition of status distinction between the different settlement types is hampered by the still relatively small sample of extensively excavated sites available for comparative analysis. A small number of villas will have been distinguished by their architecture and associated internal features – mosaic pavements and painted wall plaster, as at Minster, but there is as yet a lack of quantified artefactual data which will allow inter-site comparisons of other aspects. Allowing for chronological variation, the range of pottery supplied to the EKA2 sites does not generally suggest significant differences between them that could be related to variations in status, although the unusually high representation of samian ware at Zone 20 might be an exception to this, and there is broad consistency with the range of material represented in the roadside settlement at Monkton. The summary of Roman pottery supply to the villa at Minster (Lyne 2011) does not allow direct comparison with these assemblages. The range of imported amphora and fine ware fabrics at Minster (*ibid*, 232–3) appears a little wider than that of the EKA2 sites. Some difference in this respect would be anticipated, but while more variety in the villa assemblage is unsurprising the overall difference (for example in the overall proportion of fine and specialist wares) in quantitative terms might have been relatively slight. Comparison of the Thurnham villa assemblage with those from other sites examined in the HS1 project revealed just such a pattern (Booth 2011a, 330–3). Other sub-regional comparative analyses of this type have yet to be undertaken.

Further light may be shed on the character of rural communities by the burial evidence. Such evidence is widely distributed on Thanet, as elsewhere in Kent. Perkins (2001a, 45) identified 22 sites which he categorised as cemeteries, with additional 'single finds' of burials. EKA2 alone has added five cemeteries of Late Iron Age and/or Roman date, and there are further examples from other recent projects (see above). The pattern suggested by the recent evidence is of cemeteries of variable size, but typically small, such as might have been associated with a single farmstead or small rural settlement, sometimes perhaps in use over a period of no more than two to four generations, which may reflect the lifespan of associated settlement but might only relate to one period of use of sites of longer duration. The largest EKA2 cemetery, with some 39 burials, might still fall within such a framework given that it was probably in use for at least 250 years, although whether this use was continuous is impossible to say. A pattern of close integration of settlements and associated cemeteries seems to be indicated, with mixed rite burial perhaps typical, as here, although amongst the 22 cemeteries listed by Perkins only five were defined as of mixed rite, with seven consisting exclusively of cremation burials and 10 of inhumation burials (*ibid*, 45). It is important to note that burial in two mainstream traditions was clearly visible from before the start of the Roman period. This may seem obvious in south-eastern England (although cremation is often still considered the dominant rite in this region in the Late Iron Age), but it is not a situation that is observed readily outside this region.

It is likely that most of the Thanet cemeteries were of similarly modest size to those from EKA2, although the extent of completeness of some of them is hard to judge. The cemetery at Mount Pleasant, Minster (Perkins 2001a, 50–1, site no. 58) seems to have been much larger, but little detail is known. It is perhaps too far from the Monkton roadside settlement to have been related to that site, but at Springhead the Pepper Hill cemetery was some 500m south of the settlement (Booth 2011a, 315) so immediate proximity of settlement and substantial cemetery was not always essential. There is clearly variation in aspects of burial practice which may be seen as expressions of wealth and status, although they might just as well be related to other characteristics of individual or community identity. Overall, however, the variation is relatively subtle and occurs within a range that has no obvious high status associations. Clearly wealthy burials such as those recently excavated on the A2 (Allen *et al* 2012, 322–86) are absent, as are features such as the walled cemeteries discussed by Jessup (1959) which are relatively well-represented in Kent, with the most spectacular example just outside Springhead, interestingly contrasted with the much more 'typical'

burials of the Pepper Hill cemetery. Cemeteries associated with sites like the Minster villa may therefore be of distinctive character, but have not yet been encountered in recent work in the area.

Other aspects of site character

Recycling emerges as a distinctive aspect of the archaeological record of a number of the EKA2 sites. As already indicated, the occurrence of ceramic building material, even in moderate quantities, is no guarantee of the on-site presence of buildings with tiled roofs – detailed analysis of these assemblages often reveals a ratio of tile types inconsistent with straightforward unselective derivation from such buildings. Amphorae also had a variety of secondary uses here – for tesserae and spindle whorls, in oven structures and (usually in cut-down form) as containers in a number of cremation burials. Unlike the case of much of the ceramic building material, however, it is less clear if these secondary functions employed material that was already on site, having been originally imported as commodity containers, or whether empty vessels or parts of vessels were collected for reuse as the ceramic building material had been; either scenario is possible. Stone was clearly also recycled for a variety of purposes. Exotic stones used for inlay, as found in Zone 6, may have come from sites such as the Minster villa, but could also have derived from Richborough, only a little further distant, although accessed rather differently. For example, it is perhaps as likely that the white marble from Zone 6 was a fragment of cladding from the great monument at Richborough as that it came from a Thanet villa. Objects such as querns and particularly millstones might have been acquired in similar circumstances. The two millstones from Zone 6 were certainly recycled, in a well structure; their original place of use is not known, but need not have been within the Zone 6 settlement. It has also been suggested that some of the metal objects, again particularly from the Zone 6 settlement, might have arrived there as scrap. If so, this material could constitute a distant (presumably coincidental?) echo of the concentration of 'founders' and other hoards of Late Bronze Age/Early Iron Age date from the same area (see Fitzpatrick, Chap 3).

Recycling of materials need not necessarily be seen as indicative of extreme poverty. As more assemblages from middle and lower status rural sites are examined systematically, reuse, particularly of ceramic building material, may come to be seen as typical rather than unusual (eg, Poole 2010b), while recycling of metals was probably common if not routine (eg, Manning 2011, 70), as it was for materials such as glass, at least in an urban context (Price 2005, 169). The recognition of potentially frequent recycling raises new questions about the relationships between different rural communities; did this activity take place within a formal network of landlord-tenant relations, or was it carried out on a more opportunistic (and sometimes, perhaps, even illicit) basis? If gathering of materials from Richborough also formed part of this pattern of activity, what was the nature of the relationship there, particularly in periods when the military were the dominant presence? The site of Ickham is of particular interest in this wider context. Here activity 'appears to intensify from the early 4th century onwards' (Bennett 2010, 339), and there is no doubt that metalworking and other craft production (*ibid*, 340) were very significant activities within the settlement, alongside the operation of a sequence of water mills. In turn, recycling on a much larger scale than that suggested for the EKA2 sites was an important aspect of the metalworking at Ickham (*ibid*, 339). The location of this site roughly midway between Richborough and Canterbury surely underlines its importance as a source of supply for a variety of commodities to these places in the late Roman period, and there was presumably at least an element of official involvement (whether civilian or military) in these activities. Although Ager (in Riddler *et al* 2010, 157–9) is suitably cautious about such identifications in relation to the late Roman belt fittings from Ickham their number is nevertheless remarkable and is matched only at sites such as Richborough (Lyne 1999). Bennett's conclusions on the significance of this and other evidence are also ambiguous; on the one hand 'East Kent in the late 4th century may well have been a military zone' (Bennett 2010, 342), but he suggests that the requirement for 'military-type trappings', for the manufacture of which Ickham presents some evidence, may have been driven by the need to equip a local militia, whose role in regional defence was potentially more significant than that of the regular troops based at Richborough and elsewhere. Even allowing that the numbers of the latter were relatively limited (however Bennett (*ibid*, 342) repeats Millett's (2007, 180) figure of 2000 men), it is surely questionable whether a local militia would have been either more numerous or would have constituted a more significant market for belt and related fittings, particularly if, as is likely, the equipping of regular troops in Britain was not provided for by the fabricae (based on the Continent) listed in the *Notitia Dignitatum* (Bishop and Coulston 2006, 240).

The late Roman period

This unresolvable question does lead to the much wider issue of the nature of late Roman rural settlement in the region. There is general agreement that there is 'increasing evidence for the decline of rural settlement' (Bennett 2010, 342) at this time. This picture prevailed not only in East Kent but more widely across the county, and in some cases over an extended period. For example a recent review of the chronological range of the various HS1 rural sites shows that almost all of these were occupied in the early Roman period, but that from the 3rd century onwards the scale of activity was significantly reduced, and a substantial number of these sites were simply abandoned by the second half of the 3rd century (Booth 2011a, 334–7). A broad pattern of abandonment or at least reduction in intensity of activity

can be observed in rural settlement across the county, in areas as diverse as the Weald and its margins (eg Cleere and Crossley 1985, 84–5; Aldridge 1998, 7; Aldridge 2001, 155), the Maidstone area (eg, Booth and Howard-Davis 2003) and Dartford (eg, Booth 2011b, 281–2) in the west. In the east, the same trends affect Thanet, where of the 21 sites in Perkins' gazetteer of Roman Thanet with dating evidence only two have fairly clear later Roman evidence (eg, Perkins 2001a, 46), a picture underlined by the EKA2 evidence, while in the adjacent north coastal area the pattern of reduction in site numbers (from 20 in the Late Iron Age to only two after *c* AD 250) is as striking as that seen on HS1 (Allen 2009, 200–1). It is less strongly marked in parts of the agricultural heartland of the north Kent plain, though some contraction of settlement is seen here as well (eg, Savage 2006, 366; Clark *et al* 2009, 73).

The pattern is inevitably not simple – abandonment is not synchronous (although some groups of sites may have similar date ranges) even within the broad limits of the dating evidence, typically based on pottery. It is, however, fairly clear that settlement abandonment is not compensated for by corresponding cycles of establishment of new or 'replacement' sites, or by substantial expansion of nucleated settlements. Indeed some of the latter appear to be involved in comparable patterns of (particularly) 3rd-century decline, noted especially at Westhawk Farm (Booth *et al* 2008, 394–6), but also for example at Springhead (eg, Andrews *et al* 2011, 247–8), while the peak of activity in the civilian settlement at Richborough is seen as the early–mid-2nd century (Millett and Wilmott 2003, 188). Canterbury itself saw decline in both public and private buildings in the 3rd century, despite the provision of defences in the later part of the century (eg, Bennett 2010, 339), but resurgence there followed from the mid-4th century (*ibid*, 342).

In broad terms evidence of late Roman (and particularly 4th-century) activity appears more consistently at higher status sites than at other types of rural settlement. In some areas this may be a consequence of the focus of archaeological attention on villa sites, but samples such as that from HS1 show that this is not the case there. Even so, late Roman activity at the villa of Thurnham, for example, was of radically different character (involving no high status domestic component) after about AD 270. Elsewhere in the Maidstone area visible 4th-century activity again occurs largely at higher status sites – including the villas at The Mount, for example, and particularly Eccles (Detsicas 1989). Even at The Mount, however, occupation only extended into the early 4th century (Houliston 1999, 100), while at the villa at Snodland 4th-century activity was represented by little more than a few 4th-century coins (eg, Ocock and Syddell 1967, 192–3, 216–7). The most consistent evidence of late Roman rural settlement survival is related to the villa sites of north and north-west Kent, although not all sites of this type in these areas were necessarily occupied in the 4th century and many of the potential sites identified between Rochester and Canterbury (Wilkinson 2000) are known only from poorly-dated surface finds.

The picture in East Kent is similarly mixed (eg, Bennett 2010, 342), but it is at least clear that at the one well-excavated villa site on Thanet, at Minster, the main house had been 'largely abandoned by the end of the third century' (Holman and Parfitt 2005, 210) and the building was subsequently demolished. It seems likely that the substantial corndrier and associated structure in the villa courtyard (Moody 2010) belong to a later phase of activity, and in this respect is mirrored by the sequence of events seen at Thurnham, where another 'corndrier' was also a late Roman feature (Booth 2011a, 290). Amongst other villa sites in the area the possible example at Sandwich (Bennett 1978; Parfitt 1980), substantial in scale but with little evidence for elaboration (see the dismissive remarks by Detsicas (1983, 100)), is poorly dated but perhaps unlikely to have seen much if any 4th-century activity. Just to the south, the chronology of the temple at Worth is unclear but the published report does not seem to justify the assumption that a coin of 337–40 (Klein 1928, 78) provides a *terminus post quem* for its construction (Lewis 1966, 54; Bennett 2010, 342), and there is extensive evidence for much earlier activity (eg, Klein 1928; Holman 2005, 8–10). If we accept the suggestion of Millett (1990, 195–6; see also Smith 2008, 174–5) that construction of rural temples (and their consequent chronology) was closely related to the trajectory of villa developments then it would be no surprise if such temples were in serious decline in this area (by contrast with points further west, which provided the original context for Millett's observation) in the later Roman period, as was also the case, although perhaps in a rather different context, at Richborough (Bushe-Fox 1932, 36).

Observation of these chronological trends in settlement is one thing, explanation of them is another, but in the first instance accurate characterisation of them across a wide area is critical (though it is not attempted in detail here). Clearly there was 4th-century occupation at a number of sites in Thanet and elsewhere in East Kent, although it is indicated in different ways and was of varying duration. Coins provide evidence for activity of this period; for example issues of the Houses of Valentinian (Reece period 19) and Theodosius (Reece period 21) are quite widely distributed in East Kent on recent mapping (Walton 2012, figs 60 and 62), but the picture of widespread rural activity that they might suggest for these periods is not readily supported by more detailed excavation evidence. At a local level later Roman coins are present at a number of sites, such as Monkton, Cottington Hill on the Weatherlees–Margate–Broadstairs pipeline (Egging Dinwiddy and Schuster 2009, 118) and Zone 6 of EKA2, and in the last two cases include issues of the period after AD 388. In EKA2 Zone 20, however, later Roman activity is indicated only by pottery evidence, and does not appear to extend to the end of the 4th century.

With regard to the coin evidence there seems to be a local pattern in which high levels of mid–late 4th-century loss (at least up to the period 364–378) are encountered in a number of assemblages in which late 3rd-century coin loss is at an unusually low level. The

villa at Minster fits this pattern (Holman and Parfitt 2005), as does EKA2 Zone 6 (see Holman and Cooke, below), while the evidence from Monkton, where it was suggested that late Roman occupation lay north-east of the excavated settlement (Hicks 2008, 273), is consistent but the coins are too few for certainty. The pattern may be suggested for the very large coin assemblage from Ickham (see Brickstock and Casey 2010, 80–1) and is certainly evident at Each End, Ash (Anderson 1998), where the numerous coins and a few associated objects form almost the only evidence for activity of this date (although it is notable that the late finds include four strap ends (Garrard 1998, 157)). The significance of this pattern is uncertain, and although there is potentially a relationship between the low level of later 3rd-century coinage and the resumption of intensive military activity at Richborough the observed pattern is perhaps the reverse of what might have been expected.

The picture of late Roman rural settlement in East Kent may reflect elements of several different and perhaps conflicting trends. The wider trend, apparently seen across much of the county, may relate to the growth of villa estates to a level of almost total dominance of the landscape by the 4th century, a trend seen most clearly in the north and west of the county, with a consequent disappearance of lower status rural settlements. However, as both local (Minster) and more distant examples (eg, Thurnham) show, a number of villa sites see substantial changes in the character of occupation at this time. Nevertheless, even if such a model were plausible, it does not explain why the non-villa sites became so scarce, and there is in fact no good evidence for a concentration of population in a smaller number of focal sites of any type. If this is the case, however, it suggests at least localised depletion of the rural population, particularly in areas where villas are not common and other types of settlement had apparently largely disappeared. Such decline also seems to have affected those areas with economically specialised landscapes – those concerned with the production of iron, pottery and salt, as well as those involved in more generalised agricultural production. Moreover, the paucity of settlement evidence is matched by a lack of evidence for late Roman burials. These too are far fewer in number than previously; the correspondence of the settlement and burial record is very striking.

Perhaps we are seeing, for reasons which are obscure, a reversal of the Late Iron Age trend, and a reversion, in parts of the county at least, to the pattern of low density of settlement which seems to have been characteristic of the Middle Iron Age, as discussed earlier. However, while such a suggestion might have weight in areas such as some of those traversed by the line of HS1 where the density of occupation in the Late Iron Age does seem to have been very significantly greater than before, the not insubstantial evidence for settlement throughout the Iron Age in Thanet suggests a different pattern of development here. Consideration of the mechanisms that might explain any cycle of this general kind requires much further work. Another possibility is that the trend observed here in some way anticipates the situation that affected large parts of Britain in the 5th and 6th centuries – namely a substantial decrease in population density. It is the fact that this appears to be happening well within the Roman period and therefore is unlikely to be explicable in terms of the factors that follow from the collapse of late Roman political and economic systems, to say nothing of the impact of barbarian immigrants, that makes the phenomenon most remarkable. Moreover, despite the presence of the forts of the Saxon Shore and the implications of changed political and military conditions which they carry (however their precise function is interpreted), it is hard to see factors such as the threat of cross-Channel raiding (which has been invoked, for example, as a possible explanation for late Roman changes in the character of use, or even abandonment, in some villas in Sussex (eg, Rudling 2003, 121)) resulting in such apparently extensive abandonment of settlement, particularly as this involved inland areas of Kent as well as the more vulnerable coastal locations of places like Thanet. In any case, in some places settlement abandonment appears to have started as early as the later 2nd century. This pattern is not closely matched in adjacent areas of Britain. Current work on the Roman Rural Settlement Project shows that for the eastern counties the later 2nd century saw the largest number of rural settlements in occupation, and while there was a steady decline in settlement numbers from that point this does not seem to have been a dramatic process; significant numbers of lower status rural settlements and many villas and minor nucleated settlements saw continued activity through the 4th century, even if this was sometimes on a reduced scale (Alex Smith pers. comm. and seminar presentation 16 March 2013). Parts of Kent, at least, still seem to present a trajectory of rural settlement development that differs, sometimes significantly, from that of the majority of south-east Britain.

Regional variation in broad chronological patterns of rural settlement, perhaps related in part to much wider cycles of social and economic development, is also increasingly recorded in parts of Gaul, summarised recently by Esmonde Cleary (2013), and interpretation of some of these variations may help to inform understanding of developments in Kent. In south-eastern Gaul, for example, numbers of rural settlements decline in the 2nd century, a pattern seen as a natural response to 'transformations in ... settlement patterns closely linked with the short-term events of incorporation into the Roman Empire.' (*ibid*, 290). The net result, however, was 'a relatively long period of general stability in settlement numbers and location' in this region (*ibid*, 290). In parts of central and northern Gaul, as well, villa numbers were in decline from as early as the later 2nd century (*ibid*, 94), but again this trend was not indicative of overall abandonment of rural areas, and is instead perhaps to be seen as related to shifts in the focus of aristocratic display (*ibid*, 95), shifts which in the longer term would become manifest in militarisation of northern Gaul. With regard to other types of rural settlement regional variation in chronological trends is again apparent, but middle Roman period settlement abandonment is quite common. In northern Flanders the Flavian and Antonine

Table 4.5 Radiocarbon dates for Roman features

Laboratory code	*Feature and context*	*Material identification*	*Radiocarbon age (BP)*	*$\delta^{13}C$ (‰)*	*$\delta^{15}N$ (‰)*	*C:N ratio*	*Calibrated date (95.4% confidence)*
SUERC-40270	Grave 42001 (42003)	Cremated bone indet. (2.2g)	1795±30	-24.1			cal AD 130–330
SUERC-40282	Grave 159009 (159014)	Cremated bone indet. (1.9g)	1885±30	-20.0			cal AD 60–220
SUERC-40739	Ditch 249071 (249077)	Antler (2.9g) – fallow deer	1915±35	-21.4	5.3	3.2	cal AD 1–220

periods are seen as showing peaks of settlement activity, with significant reduction in settlement numbers by the end of the 2nd century and a relatively minimal level of settlement by the end of the 3rd (De Clercq 2011, 239–40). Closer to Kent, in an intensively studied landscape at Onnaing near Valenciennes, and in the adjacent region, widespread abandonment of sites was noted at the end of the 2nd century or the beginning of the 3rd (Clotuche 2009, 61–2), yet a little to the north, near Lille, the same pattern was not seen (De Clercq 2011, 239 quoting Quérel 2007). There is an impression that some of the regional chronological patterning is more closely linked to variation in soil types, specifically that less productive soils see proportionally higher rates of later Roman settlement abandonment, than is typical in southern Britain

Widespread settlement desertion from the later 2nd century onwards is therefore not a phenomenon confined to Kent, but the parallels from the near Continent are variously interpreted. What seems clear is that by the 4th century substantial villa complexes are largely a thing of the past in northern Gaul; in those areas where intensive rural settlement was maintained it was generally characterised by middle and lower status complexes. For Thanet there is insufficient evidence to allow reliable characterisation of the rural settlements that do survive into the 4th century, although if the evidence of Minster is typical here, too, villas are no longer an important element of the landscape – although it is impossible to know whether their estates continued to function as coherent entities or had become fragmented and subject to changed conditions of tenure. It is possible to argue that continued activity at sites such as EKA2 Zone 6 was a result of the function of the Ebbsfleet peninsula as a crossing point to Richborough, and that key sites in the island (and elsewhere, like Ickham and Each End, Ash) were specifically tied in to the late Roman defensive network of the region and the infrastructure required to sustain it. Whether this was really the case, or whether agricultural communities remained largely self-contained (beyond the need to meet the requirements of the late Roman taxation system), cannot be determined at present.

Dating, finds and environmental summaries

Radiocarbon dating *by Alistair J Barclay and Chris J Stevens*

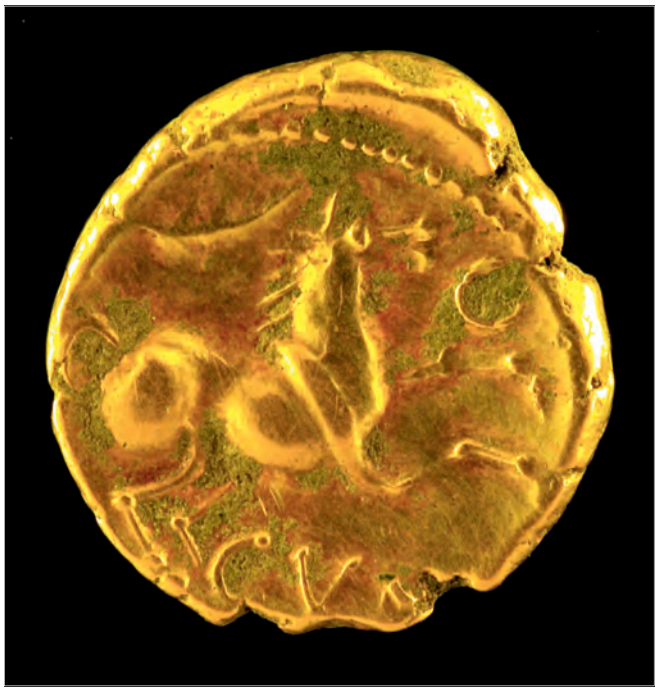
Three radiocarbon measurements were obtained on material thought to be of Roman date: two on cremated human bone from selected burials and a third on antler (see Table 4.5 and Vol 2, Fig 21.11). The radiocarbon dating suggests that grave 159009 (SUERC-40282) and the antler from ditch 249071 (SUERC-40739) are likely to belong within the late 1st and 2nd centuries AD, whilst the burial within grave 42001 (SUERC-40270) is likely to have been made in the 2nd or 3rd century AD.

Iron Age and Roman coins *by David Holman and Nicholas Cooke*

The assemblages recovered from the excavations provide important evidence for coin use on Thanet in the Late Iron Age and Roman periods. In particular the coins from Zones 6 and 7 contribute to providing a chronological framework for activity on the site, and also highlight changes in coin use and loss over time which may reflect periods of activity or even abandonment.

Iron Age coins

A total of 53 Iron Age coins dating from between the mid-2nd century BC and the early 1st century AD, and one earlier Siculo-Punic bronze coin, were recovered during the course of the excavations, the majority (46) from Zones 4–7 within and in the immediate vicinity of a previously known site at Ebbsfleet which had already



Pl 4.30 Iron Age stater of Cunobelin (Zone 6)

produced a significant number of Iron Age coins from metal-detecting activity over a number of years in the 1990s (Holman 2005a) (Pl 4.30). The excavation of a portion of this site, and the coin assemblage from it provide important evidence for coin use and loss on a Late Iron Age domestic settlement in East Kent. Analysis of the range of Iron Age coins from this site sheds light on the date range of the settlement, changes in coin use and also trade links and exchange networks – or lack thereof – with the Continent. It also provides an opportunity for a reassessment of the previously published group of coins from the site.

Potin coins are very much in the majority, much more so than has previously been noted at Ebbsfleet; indeed, the 23 Flat Linear I potins alone represent 50% of the Iron Age coins recovered from Zones 4–7, a much higher proportion than would have been expected based on earlier finds from the site. This gives cause for a degree of reinterpretation of the overall coin assemblage from Ebbsfleet, Flat Linear I potins having now surpassed Kentish Primary potins as the most significant element in terms of comparison with the surrounding area. These changes may be seen as providing a reminder of the pitfalls of relying on relatively small samples for coin analysis from any particular site, the greater number now available probably giving a truer reflection of what was being used and lost/deposited, for whatever reason(s), on the Ebbsfleet site. This is discussed further in the full coin report (Vol 2, Holman and Cooke, Chap 1).

Comparing the coins from the Ebbsfleet settlement against all other Iron Age coins recorded from Thanet also illustrates the early nature of the coinage from this site, with potin clearly dominant, in contrast to the background pattern which shows a more even loss pattern and an overall later distribution while maintaining potin in the foremost position.

Although only smaller numbers of Iron Age coins were recovered from the other sites along the route, these provide some information on coin use in the wider landscape, and in some cases may be linked to more dispersed settlements or associated activity. Their distribution is broadly similar to that already discerned from earlier finds from Thanet and across East Kent generally and forms part of a consistent background pattern of coin loss away from clearly defined sites in the conventional sense. There seems to be little difference in the spatial distribution of Iron Age and Roman coins and common factors pertaining to the dispersal of coins from settlements may be evident for much of this.

Roman coins

With the exception of the small hoard of five silver *denarii* buried on Zone 7 in the second half of the 2nd century AD, the Roman coins recovered from the excavations largely comprise small denomination coinage, probably lost in everyday use on the sites. None of the assemblages apart from that from Zone 6 is sufficiently large to allow inter-site comparisons to be drawn. Despite this, the smaller assemblages recovered from some sites provide useful dating evidence for both features and phases of activity. In particular, the 15 coins from Zones 20 and 21 suggest that activity in that area dates to the late 3rd and first half of the 4th centuries AD.

The largest assemblage recovered (some 89 coins) was that from Zone 6. The 1st-century coins from the site suggest that there was coin use on the site in the second half of the 1st century AD. Although the copper alloy coins of this period could well have remained in circulation into the 2nd or even 3rd centuries AD, the presence of a denarius of Vespasian probably indicates that coins were used on the site by the end of the 1st century AD. From this period onwards, it appears that coins were used regularly, if in small quantities, on the site until the mid-3rd century AD. Whilst the dearth of coins of the first half of the 3rd century AD is not unexpected, the small quantity of *antoniniani* from the second half of the 3rd century certainly is, although this is paralleled by a very similar decline at the nearby Minster Roman villa site. The small numbers of coins from this period strongly suggest that the site saw minimal activity at this time. This apparent hiatus of activity only lasted until the early 4th century AD, when there appears to have been a resurgence of coin use, with coin loss continuing throughout the 4th century and in all probability into the early 5th century AD. The latest coins from this area are of the House of Theodosius, which seem to have comprised the last official shipments of coins to the province prior to its abandonment by the Roman state in *c* AD 410, and which were found in large quantities at the nearby fort at Richborough (Reece 1981). Roman coins post-dating this period are extremely rare as site finds, and it seems likely that coinage ceased to be used in Britain as part of a monetarised economy in the first half of the 5th century AD.

Metalwork *by Ian Scott*

Some 1633 metal objects (excluding fragments such as nail stems not counted as objects) were from contexts of Late Iron Age/early Roman to late Roman date and amounted to 56.5% of all metal objects recovered from the project (see Vol 2, Scott, Chap 3, Table 3.1), and 76% of all objects stratified in contexts ranging from later prehistoric to post-medieval in date. In addition, a large but unspecified proportion of the 400 objects from colluvial and unphased deposits in Zone 6 were of Roman date. The principal Roman assemblages came from Zones 6, 10, 19 and 20, with a large part of the assemblages from these last three zones, and Zones 10 and 19 in particular, consisting of material from graves, including coffin and shoe nails.

Zones 1–5

There are no stratified Roman finds from Zones 1–3 or Zone 5. In Zone 4 there are 11 stratified Roman finds including seven from grave 177322. The other finds comprise miscellaneous fragments and two fragments of knives, both from Roman ditch 190290.

Zone 6

Some 251 metal finds (317 fragments) come from contexts assigned a Roman date. These comprise six finds from contexts assigned a broad Roman date, and 104 from early Roman contexts. Eight finds are from early to middle Roman contexts, 49 from middle Roman contexts and just two from contexts assigned a middle–late Roman date. There are 82 objects from late Roman contexts.

The finds from contexts assigned a broad Roman date comprise an L-shaped iron fragment possibly a structural fitting from pit 170192, a nail from pit 240163, and three nails and at least two fragments of folded copper alloy strip with one strip wrapped around the other at a right angle (ON 3377, Fig 4.121, 15) from layer 258058. The fact that this bracelet is incomplete, and possibly was deliberately cut and folded, suggests that it need not have been new when deposited. Another cut and rolled fragment of broad armlet (ON 3308, Fig 4.121, 14) was recovered from colluvial deposits.

Early Roman

Objects from early Roman contexts include a number, mainly nails, from two of the early Roman graves (126238 and 260017). Other early graves had no metal finds. Most of the finds are from ditches, and many were structural items, nails, miscellaneous metal fragments and objects of uncertain identification. Ditch 190441 produced a piece of square bar which is probably part of small mortice chisel (ON 3885), and ditch 170116 produced a whittle tang knife with distinctive curved blade (ON 3907). Ditches 170115 and 249117 produced the only personal items: a Colchester brooch (ON 3966) from ditch 170115 and a coiled spring and pin fragment (ON 3234) probably from a simple bow brooch from ditch 249117. Only ditch 170041 produced more than a small number of finds; these include nails, two structural items, a piece of a binding, and miscellaneous pieces of bar, strip or block. A small socketed reaping hook (ON 669) and a probable small worn ploughshare (ON 4088) were more distinctive.

Pits individually also produced limited numbers of finds, and perhaps surprisingly the range of finds from pits was even more limited than that from ditches. Most pits produced nails, miscellaneous fragments of strip, bar, sheet etc, unidentified pieces and waste fragments. Pit 319034 produced an object which may well be an incomplete S-curve key, rather than a latch lifter (ON 3960, Fig 4.122, 22), in which case this is an unusual find. The only other object was a tapering copper alloy pin with a plain head (ON 2986) from pit 245133. One other identifiable object from an early Roman context was a snaffle bit link (ON 3267) from deposit 301095.

Other contexts produced small numbers of finds. Hollow-way 143316 produced a tapered punch or spike (ON 4018) and a socket (ON 3338) probably from a tool such as a reaping hook. The finds from posthole 247088 include an incomplete reaping hook (ON 2183) and a well-preserved nail cleaner (ON 2182), the latter a 1st-century type with shouldered blade and moulded neck (Eckardt and Crummy 2008, 121, fig 59). A copper alloy hairpin with decorated head (ON 3231, Fig 4.121, 19) came from layer 124163.

Layer or deposit 301095 produced a pair of iron dividers (ON 3276), a mouth bar from a jointed bridle (ON 3267) and a fragment of a cable-pattern bracelet formed from wires twisted together (ON 3265).

Early or Middle and Middle Roman

Finds from early or middle Roman contexts include a fragment of saw blade (ON 2995), the stem of a probable hairpin (ON 2961), an iron finger-ring with large oval bezel (ON 2969, Fig 4.121, 17) and three nails, all from pit 245134. Middle Roman contexts produced five tools, a hooked iron billet, nine personal items including a single hobnail, one household item and one structural object, plus nails, miscellaneous pieces of rod, strip, bar, plate, undiagnostic fragments and a piece of melted copper alloy.

The finds come from a variety of feature types, but only SFB 170136, pits 170021 and 263091, hollow 247146 and well 153123 produced more than three metal finds. The finds from five middle Roman contexts are dominated by nails and miscellaneous pieces of metal, but there are a number of tools and personal items. One item of note is a 4th-century Roman copper alloy buckle (ON 990145, Fig 4.120, 4 from ditch 170099, possibly intrusive in this context), of a type which has military associations. Another buckle of similar dating but different form (ON 335, Fig 4.120, 5) was recovered from colluvial deposits (see below).

The tools include a small reaping hook (ON 897) from hollow 247146 and a tanner's draw knife (ON 4062, Fig 4.120, 6) from ditch 137270. Other tools comprise a possible file (ON 4578) from ditch 170099, a rake tine (ON 3334) from pit 263091 and a complete copper alloy needle (ON 3886) from well 153123. Personal items are more numerous and include a Colchester brooch (ON 3976) from ditch 170150, a hairpin (ON 614, Fig 4.121, 18) from pit 170021, and a nail cleaner and ear scoop (ON 3967, Fig 4.121, 20) from pit 327030. The latter items were found together and form part of a toilet set.

Middle or Late and Late Roman

Three graves produced small quantities of finds. Grave 136191 produced only three incomplete nails, which alone would not be enough to indicate the presence of a coffin, but the finds from grave 254020 include 13 nails, three fused fragments of bar and a nail or stud with a large conical head (L extant 73mm). The single metal find from grave 246148 is a large plain iron D-shaped buckle (ON 3309), possibly for a harness.

Only a small number of other features produced finds other than nails or miscellaneous fragments. The only finds from gully 170107 were six corroded and encrusted hobnails (ON 4060). Pit 254104 produced a number of fragments of iron barrel hoops (ON 3213). SFB 170132 produced 14 metal finds. These include a probable socketed weapon point, possibly incomplete (ON 4094, Fig 4.120, 1), a cable-pattern bracelet (ON 3218), a brooch pin (ON 885), a latch lifter (ON 3986)

and a poorly preserved fragment of rod or bar with looped terminal (ON 4574). Other sunken-featured buildings produced only small numbers of nails or miscellaneous metalwork.

Zone 7

Roman finds from Zone 7 are almost entirely from middle Roman graves. The other finds include a whittle tang knife (ON 1561) and an unidentified fitting (ON 1559) from Roman ditch 159241

Zones 10–14

Zone 10 finds include a plain pair of tweezers (ON 200) from early Roman ditch 194090. There are 482 objects from early or middle Roman graves and 16 (mainly nails) from middle or late and late Roman graves. Finds from Zone 11 comprise 41 objects, including two brooches from grave 147141; most are nails and miscellaneous fragments. There is a Nauheim derivative brooch (ON 414) from pit 129018 and a bracelet fragment (ON 422) from ditch 159314, both features of early Roman date. Finds of middle Roman date include 16 objects from quarry pit 262015, one a blade from a pair of shears (ON 433), and a rosette brooch (ON 429) and a spring fragment (ON 430) from a second brooch both from ditch 159332.

Zone 12 metal finds include a complete iron tyre (ON 1400, Pl 4.31) from feature 268010, associated with a small quantity of Roman pottery. The tyre is just less than 1 metre in diameter (950 x 920mm), has a plano-convex cross-section with the convex face on the outside, and is approximately 40mm wide. Unusually it is made in two pieces with two lap joints on opposite sides; it is about 45mm wide at the joints. The cross-section suggests that the tyre may have been well-worn before it was discarded or lost. Although not made from a single length of iron, it can still be classified as a one-piece hoop tyre which would have required heating to fit to the wheel. The date of the context is not absolutely certain but the tyre is most likely to be Late Iron Age or Roman in date.

Pl 4.31 Iron rim from Roman wheel (Zone 12)

Pl 4.32 Copper alloy spur of Roman or Anglo-Saxon date, from ditch 159224 (Zone 14)

Roman metalwork from Zone 13 comprises eight finds from early Roman contexts including six finds from SFB 193140. These include a knife (ON 1515), a small Colchester brooch and a socketed reaping hook (ON 1513). A mortice chisel (ON 4568, Fig 4.122, 24) with distinctive blade was recovered from SFB 191125.

Zone 14 produced a small quantity of metal finds from Roman contexts including part of a snaffle bit link (ON 1567) from enclosure ditch 159224, a spur (ON 1709, Pl 4.32; Vol 2, Fig 3.7, 11) and knife (ON 541) from enclosure ditch 159219, and another knife (ON 1710) from pit 27909. The latter knife is of Saxon form. The form of the spur, which is not precisely paralleled, may also be post-Roman. It differs in significant ways from known late Roman spurs (eg, a spur from Richborough – Bushe-Fox 1932, 79, pl x, no 10) and its date is uncertain as a consequence. Although the ditch from which the spur came is dated to the Roman period, the only pottery (from the upper fills) is mid-Saxon. The knife (ON 541) from ditch 159219 noted above is incomplete but from its form it could be of Roman or Saxon date.

Zone 19

Zone 19 produced 196 metal objects from Roman contexts, almost 95% of which were from graves. The finds from other contexts include a penannular brooch (ON 1204, Fig 4.122, 25) and a plate brooch with dished cone (ON 1212), both from early Roman ditch 126170, and an ox-goad (ON 4709) from early Roman ditch 126191.

In the eastern cemetery only inhumation grave 126204 contained a metal find, in this instance a tyre runner or traveller (ON 3633) similar to the example (ON 2960) found in Zone 6. In the main central cemetery nine inhumation burials produced metal finds, but of these only five produced nails. Grave 150097 had a minimum of 15 nails, but also other ironmongery including loop hinge strap fragments (ON 3400), a nail and rove (ON 3418), a possible dog or clamp (ON 3401) as well as various bits of strips, bindings and pieces of bar (Fig 4.57). Grave 220112 also had numerous nails and nail fragments, but also a complete

joiner's dog (ON 3628) and a large iron spike (ON 3615) (Fig 4.61). Only grave 176342 had metal grave goods. These comprise three copper alloy bracelets or anklets and a small disc of iron (ON 4637) (Fig 4.58; Pl 4.29); the grave contained no nails.

Ten cremation graves in the main central cemetery had metal finds. Three graves had only nails, and another two had nails and hobnails. In the case of 177480 the grave additionally had some smaller nails (33–40mm long) which may have come from a box or casket. Grave 153068 may also have held a casket burial. The finds included small tacks (20–33mm long) suitable for a small box or casket, but also an iron ring with two strap junctions (ON 2032) which could have served as a hinge on a box, a copper alloy ring with grooved outer edge (sample 1225), a fragment of copper alloy binding (ON 2014) and a small cast copper alloy slide bolt (ON 1225) (Fig 4.68). The latter would have been suitable for a small casket or chest. Four graves each contained a single brooch, these comprising early possible Colchester and Colchester types (graves 126100 and 220057 respectively), a large rosette brooch (grave 150100, ON 3606, Fig 4.66) and an enamelled plate brooch in the form of a nailed shoe sole (grave 220064, ON 1286, Fig 4.74).

In the Western cemetery, five graves produced no metal finds and four graves produced one or two grave goods each, all of copper alloy; a small hollow copper alloy ring and a little collar (grave 216010), a hairpin (grave 257016, ON 2433, Fig 4.89), a spiral copper alloy finger-ring (grave 262044, ON 1810, Fig 4.91), and a tiny penannular brooch (grave 278060, Fig 4.92, ON 4633). The spiral finger-ring and the hollow ring could both be of Iron Age date.

Zones 20 and 21

There are 49 metal objects from generic Roman contexts, mainly from pits, ditches and especially from graves. Cremation burial 252066/8 was accompanied by three copper alloy bracelets (ONs 4412–3, 4426) and a finger-ring (ON 4414), part of the jointed mouth bar of a snaffle bit, nails and miscellaneous iron fragments (ON 4425) (Fig 4.100; Pl 4.17). Inhumation graves 126066 and 267003 both contained hobnails, but neither produced sufficient hobnails for a pair of shoes or boots (22 and 12 hobnails respectively). Both graves also contained coffin nails. Metal finds from other features included an iron rake tine (pit 126090, ON 3185) and a knife with a solid handle (ditch 288074, ON 3801).

Most early or middle Roman finds came from burials, but were generally unremarkable. Metal finds of the middle Roman phase were more numerous and include a number of tools, personal and household items, coming mainly from pits and sunken-featured buildings, with limited finds from ditches; two inhumation burials contained small numbers of possible coffin nails, one also containing a small length of thin iron rod. Finds from ditches of this phase include a possible harness bell of copper alloy (ON 860) and a large nail or holdfast with L-shaped head (ON 4142) (from ditch 205059), a small pruning hook (ON 3107), a possible small chisel or spatula with a rod tang or handle (ON 4151), part of a bone handle on an iron tang (ON 1902), nails and miscellaneous pieces (all from enclosure ditch 249051).

Middle Roman metal finds from pits include a possible punch or awl (ON 4427) comprising a tapering spike of circular section (pit 189182), a fragment of a decorated copper alloy hairpin (pit 228055, from sample 7709) and a knife of distinctive blade form with a rounded tip and a rectangular-section handle or tang (pit 250094, ON 3181). Pit 279028 produced a number of finds including a split spike (ON 108), a length of bar with loops formed at each end (ON 4431), and a bead formed from a cut and rolled fragment of broad copper alloy armlet.

Finds from sunken-featured buildings include two curved iron strips, one with a nail, possibly binding from a bucket or other vessel (SFB 249049, ON 3135), while those from SFB 228059 include a probable leather-working knife with leaf-shaped blade (ON 3111, Fig 4.122, 29). A third SFB (249081) contained the most metal finds, including a smith's hammer (ON 3195, Fig 4.122, 26), a tanged paring chisel (ON 3184, Fig 4.122, 27), a rake tine (ON 3185), a small square-sectioned punch (ON 4420), and an awl (ON 3704). A fragment of a broad lozenge-section blade with an incomplete broad tang (ON 4174) could be from a bladed tool or possibly even from a sword. Other finds amongst a total of 43 metal objects include two L-shaped bindings (ONs 3191, 3706, an iron collar (ON 3716), an iron strip with nails (ON 3704), and a large heavy bolt with a head in the form of a truncated cone (ON 3199).

Middle or late Roman sunken-featured building 249085 produced 27 metal objects including a small socketed pruning hook (ON 4026), a small simple copper alloy bracelet (ON 3800) and a bucket handle mount (ON 3732) together with two bindings (ONs 3728, 4188), an iron stud with a large domed circular head (ON 3729) and 12 nails. Late Roman metal finds were quite numerous, but concentrated mainly in three features. Ditch 217122 contained 18 metal finds including a copper alloy finger-ring with glass intaglio (ON 1904), the handle and part of the bowl of a small iron ladle or spoon (ON 4155), and a latchlifter (ON 4154), while pit 251005 produced 22 objects including a small socketed reaping hook (ON 856), two hobnails, and an iron collar or binding (ON 847). The largest group of finds (125) came from SFB 249083, which produced many small undiagnostic and miscellaneous pieces. Other finds from this feature include a small tanged lunate leatherworking knife (ON 3745, Fig 4.122, 28), three tanged knives (one with an antler handle) (ONs 3152, 3158 and 3748), a barb spring padlock bolt, a slide lock bolt (ON 3117) and a possible barb spring padlock key (ON 3188), and possible lock plate (ON 4176), this last similar to lock plates from Anglo-Saxon contexts (eg, ON 1871 from Grave 171171). Structural fittings include a probable swivel (ON 3117), a split spike loop (ON 4193), and an iron dog or staple (ON 4161).

Summary catalogue of selected illustrated pieces

Figs 4.120-122

Zone 6

Militaria

1 ON 4094. Missile point, socketed with tapering circular section point. Fe. The socket is open and the tapering point may be incomplete. Context 289044, sunken-featured building 170132. Late Roman.
Possibly a complete missile point, but more probably the socket and part of the stem of a socketed pilum or similar weapon (*cf* Poux 2008b, 332–5, fig 22; see also Desbat and Maza 2008, 249–50, fig 7, no 61).

2 ON 699. Possible tanged arrowhead with lozenge section blade. Fe. Context 130012, colluvium.
This is comparable to points found at Numantia (Spain), and at Alesia (Côte d'Or) and Montmartin (Oise) (Deyber 2008, figs 1–2), which have been identified by Deyber (2008) as arrowheads, although other identifications as tools, probably awls or burins, have been suggested and are perhaps more likely. Renoux (2000, 91–114) does not include this form in his typology of arrowheads, although similar points found at Vindonissa (Switzerland) have been identified as weapon heads (Unz and Deschler-Erb 1997, 23 and Taf 20: 381–2).

3 ON 4311. Cast buckle plate with pattern of fine punched dots and hinged buckle frame (missing). Cu alloy. Context 130012, colluvium.
There is a very similar military belt buckle plate from London (Grew and Griffiths 1991, 63 and fig 9, no 49). This belt plate is a form defined by Grew and Griffiths as their Type A, examples of which are decorated with punching or niello inlay (*ibid*, 49). Grew and Griffiths (*ibid*, 55) suggest that narrow plates with punched decoration such as the examples from London and Silchester (*ibid*, fig 9, nos 48–50) may have been locally produced. The London examples are unused. The archaeological evidence suggests that Type A fittings first appear in the principate of Augustus, they are found in Tiberian forts, but are most common in forts founded under Caligula or Claudius. The British evidence suggests that this type of fitting went out of use by the 60s.

4 ON 990145. Buckle with oval frame attached to oval plate formed from sheet and secured by 2 rivets. Cu alloy. Context 279144, ditch 170099 (upper fill). Middle Roman.
This buckle is a late Roman form current in the 4th century (Swift 2000, 190) and is the type defined by Sommer (1984, 18–9, Taf 1: 1) as his Sorte 1 Form A Typ a, and by Simpson (1976, 195–6, fig 2) as part of his Group 2. Compare examples from Winchester (Booth *et al* 2010, 218–9 and fig 3.248; Clarke 1979, 270–2 and fig 34; and generally Cool 2010, 285–90), Silchester (Boon 1959, 80 and pl iii: A8), Canterbury (Ager, in Garrard 1995, 1028, fig 437, no 414; see also Ager 1987, 27, fig 1, e) and Intercisa (Hungary) (Alföldi 1957, 460–3 and Abb 104). Fragments of similar buckles have been found at Richborough (Lyne 1999, 105–6, figs 7–17, 34 and 37). See also Cat no 5 below.

5 ON 335. Buckle, with concave, or saddle-shaped, loop and a buckle plate formed from sheet Cu alloy. The plate has a pattern of lightly engraved lines and small punched dots on its face. Cu alloy. Context 130009, colluvium.
Compare with Cat no 4 above. The plate is incomplete but may have been kidney-shaped. The buckle falls into Sommer's Sorte 1 Form A Typ b (Sommer 1984,18–9, Taf 1:2; see also Swift 2000, 190–2, figs 231–2) and Simpson's Group 1 (Simpson 1976, 193–5, fig 1). For examples from Intercisa (Hungary) (Alföldi 1957 (460 and Abb 101: 6). Pieces of similar buckles have been found at Richborough (Lyne 1999, figs 1–6 and 34).

Tools

6 ON 4062. Tanner's two-handed draw knife with curved blade of triangular section, with a square tang at each end for handles. Fe. Context 137271, ditch 137270. Middle Roman.
Almost certainly used in the making of leather rather than for woodwork. Probably an unhairing knife rather than a scudding knife or fleshing knife. A blade similar in form to this knife was found at the Magdalensberg and has been identified as a *Haareisen,* or hair knife, ie, an unhairing knife (Dolenz 1998, 212–3, Taf 76, no W322). Gaitzsch (1980, Taf 25, nos 128, 130, 133) cites examples from Pompeii. He suggests that draw knives fell into three groups defined by their lengths (*ibid*, 68–9, Abb 8). This example is shorter than the examples adduced by Gaitzsch.

7 ON 2963. Awl with tapering circular section blade and tang, with step down and a small non-ferrous washer at junction. Fe. Context 305004, feature 170010, colluvium.
A leatherworker's awl, this fits with Manning's Type 1 (Manning 1985, 39–40, fig 9), with a long tapering blade and marked shoulders, but the tang is longer than the examples catalogued by Manning.

Billet

8 ON-. Hooked billet. Top of a hooked billet. Fe. Weight: 638g. Context 262158, posthole 262157. Middle Roman.
Trade iron of Late Iron Age or Roman date. Small numbers of hooked billets are known (Crew 1995, 'Meare type') and most examples are from Iron Age sites (Salter 1997, 96), but a large example was recovered from a 2nd- to early 3rd-century context at Asthall (Oxon) (Salter 1997, 95–6, and pl 4.1; also Mould 1997, 83, 85, and fig 4.4, no 1). The Asthall billet weighed 2.9kg. Another example of similar weight was found at Wookey Hole (Somerset) (Balch 1914, pl XVII, no 11 and 11a, 87). The examples known to Crew (1995) ranged in weight from 1200–1640g, substantially less than the examples from Asthall and Wookey Hole. The present example weighs significantly less than 1200–1640g but is incomplete.

Weights and weighing

9 ON 2972. Possible steelyard, bent double. There is a terminal knob at the end of the shorter arm, and a series of notches to allow adjustment of the position of the scale pan or hook, to allow different ranges of weights to be measured. The counter balance weight was moved back and forward on the longer arm until the balance was level. The weight could then be read from the position of the counterbalance. The suspension loops are missing. Fe. L extended: *c* 540mm. Context 305006, colluvium.
Steelyards in both copper alloy and iron are known, and they can vary considerably in size. Two steelyards from Dorn Farm, Moreton in the Marsh (Glos) are large examples each with bars over 1m long (Manning 1985,

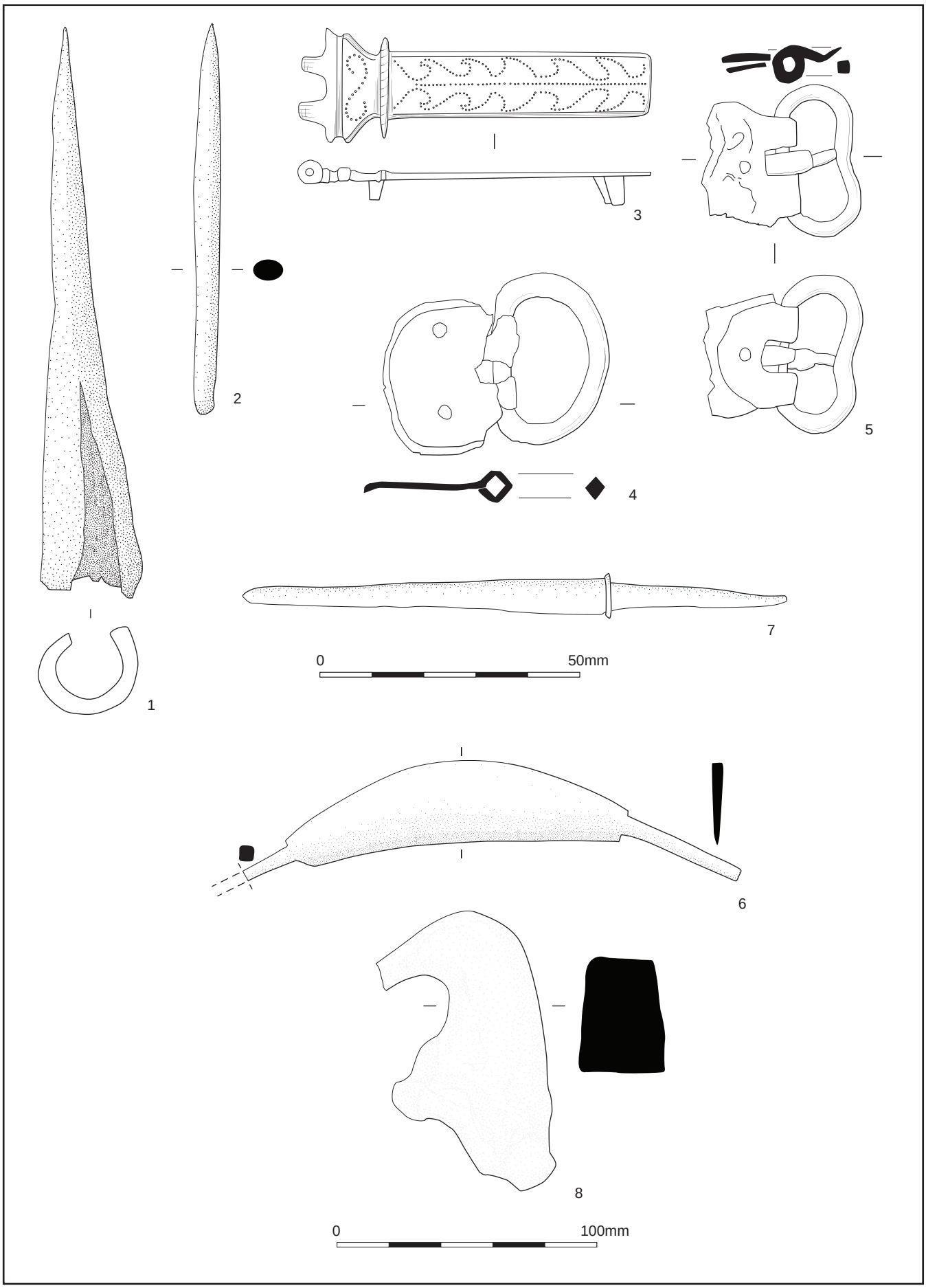


Fig 4.120 Selected metal objects Nos 1–8

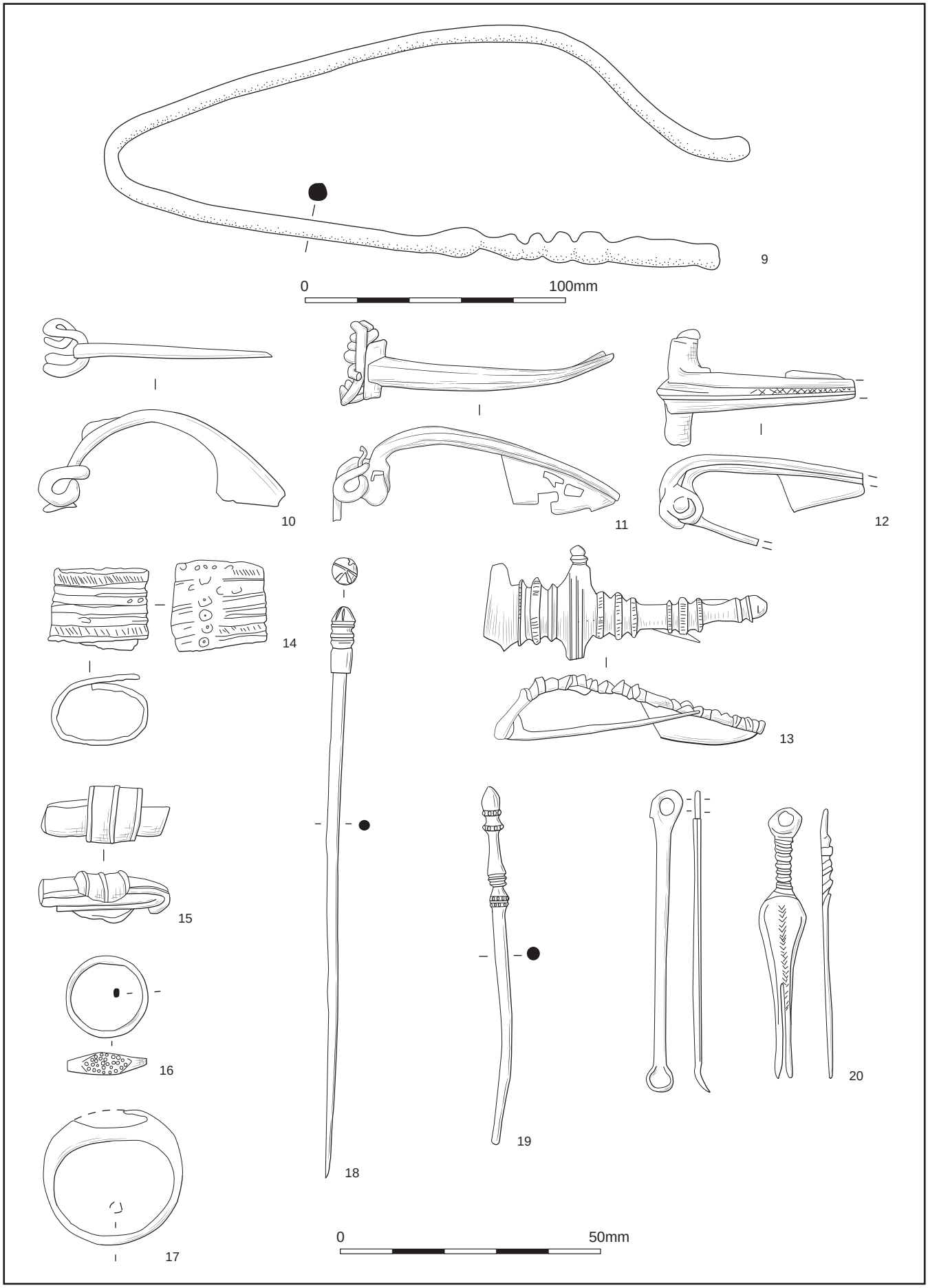


Fig 4.121 Selected metal objects Nos 9–20

106, pl 52, 40–1). For steelyards marked with numbers see examples from Richborough (Henderson 1949, 131, pl xxxviii, no 133), Westhawk Farm (Ashford) (Cool 2088, 167–8, no 80), Kastell Aislingen (Germany) (Ulbert 1959, 77, 96, Taf 29, no 1), and from Vodice (Slovenia) (Pflaum 2007, 299–300, pl 1). For the use of the steelyard see Crummy 1983, 99–100, and more generally see Manning 1985, 106–7, pl 52.

Personalia

Brooches

10 ON 2148. Simple one-piece bow brooch, with circular section bow with knob towards head. It has a four coil spring with internal chord, and plain catch plate. Cu alloy. Context 130012, colluvium.
Simple one-piece bow brooches are a mid-1st-century AD form occurring in both pre- and post-Conquest contexts including Flavian contexts (Bayley and Butcher 2004, 146–7). The plain knob on the bow perhaps can be compared to examples from Richborough with mouldings on the bow (especially Bayley and Butcher 2004, 56, and fig 38: 28).

11 ON 3878. Small Colchester brooch, with three rectangular perforations in the catch plate and plain wings over the spring. Plain bow with flattened outer face. Cu alloy. Context 130012, colluvium.
Colchester brooches date to the early to mid-1st-century AD, and are a pre-Conquest type, which continued in use in the middle years of the century (Bayley and Butcher 2004, 148–50; see also Mackreth 2011, 37–8). This is a slightly later form that probably dates to the Claudio-Neronian period (Mackreth 2011, 37, 41).

12 ON 3350. Small two-piece Colchester brooch, no foot knob and unpierced catch plate. Spring intact and protected by plain wings. Cu alloy. Context 130012, colluvium.
Small two-piece Colchester with a separate spring and pin which are attached to a lug at the head of the brooch. Mackreth terms this form the Harlow brooch (Mackreth 2011, 50). This particular brooch is a small example of the type with no foot knob (Bayley and Butcher 2004, 83, nos 167–80). They date to the mid-1st century AD (*ibid*, 157).

13 ON 3353. Hod Hill brooch. Cu alloy. Context 130012, colluvium.
Hod Hill brooch with lateral knobs comparable with an example from Stonea (Cambs) (Mackreth 2011, pl 95, no 9074). Mackreth (*ibid*, 140) suggests that this group of Hod Hill brooches dates from the Conquest period and did not continue in use after *c* AD 60.

Bracelets and armlets

14 ON 3308. Broad armlet decorated with parallel moulded ridges including cable pattern borders. Slightly broadened but undecorated terminal. Rolled fragment. Cu alloy. Context 130012, colluvium.

15 ON 3377. Possible bracelet fragments, comprising 2 strips folded together. The outer strip is a fragment of broad bracelet band wrapped around a folded fragment of narrow strip. The outer band has plain raised borders and a central rib and is probably a fragment of an early Roman broad armlet. Cu alloy. Context 126236, layer 258058. Roman.
Nina Crummy (2005) has quite recently drawn attention to the fact that broad armlets have a limited distribution (*ibid*, fig 2) and are associated with early Roman levels, suggesting that they may have been military decorations (*armillae*). Although the early dating and limited distribution of the objects are undoubted the arguments are not totally convincing. One problem is the apparent lack of continental parallels for the early broad bracelet form (*ibid*, 98). Continental parallels might be expected if they were indeed military decorations. That said the sculptural and literary evidence suggests that *armillae* could vary in form (Maxfield 1981, 89–91) and this makes it difficult to distinguish *armillae* from other bracelets. However, military *armillae* appear to have been made of gold or silver and not of copper alloy, which argues against the identification of the early broad copper alloy bracelets as *armillae*. The fact that both fragments of armlet are incomplete, and that it was probably deliberately cut and folded or rolled suggests that it need not have been new when deposited. Swift (2012) has recently discussed the reuse of bracelets and in particular their reworking as finger-rings. It is conceivable that Cat no 14 is a poor attempt to make a ring from part of an early bracelet, but even if this was not the case it is clear that the bracelet had been cut and part retained for use. Cat no 15 is a little more difficult to interpret since the fragments have been tightly rolled.

Finger-rings

16 ON 627. Small finger-ring with expanded bezel decorated with a diamond-shaped panel of raised dots. Cu alloy. Context 130012, colluvium.
Cool (1983 vol 1, no 9, 238–9, fig 6.1 and map 6.1; vol 4, 1024–5, and fig 108, no 2) classes rings such as this as her Sub-group Va. Cool only listed 8 examples and their distribution was limited to a zone running from Caister-on-Sea, Great Yarmouth (Norfolk) to Silchester (Hants). Other examples came from Caistor by Norwich (Norfolk), Colchester and Chelmsford (Essex), Braughing and *Verulamium* (Herts). Cool suggested that the ring type dated to the 'middle part of the second half of the first century AD'.

17 ON 2969. Finger-ring with large oval bezel. Fe. Context 245123, probable pit 245134. Early or middle Roman.
This ring falls in Cool's Group IV, rings with expanded bezels set with a stone or glass intaglio, and forms part of Sub-group A (Cool 1983, vol 1, 227–37, fig 6.1, no 6). The form developed during the early 1st century AD, and examples are found in 1st- and 2nd-century AD contexts in Britain.

Hairpins

18 ON 614. Hairpin with tapering stem and decorated head. Cu alloy. Context 170024, pit 170021. Middle Roman.
This hairpin has affinities with Cool's Group 11 pins decorated with multiple angular blocks (Cool 1990, 160, 164 and fig 7: 4, 5, 9, 10), and her Group 12 pins with cross-incised knobs (*ibid*, 164 and fig 8: 3–5). Pins of sub-group 11A and of Group 11 are both found in Kent (*ibid*, 164). Both Group 11 and Group 12 pins seem to have been in use by the early 2nd century but the available dating evidence is limited.

19 ON 3231. Hairpin fragment comprising decorated head and upper stem. Cu alloy. Context 124163, layer. Early Roman.
This pin is best assigned to Cool's Group 2 hairpins with 'knob on cordon' heads (1990, 154 and fig 2: 4 and 6). Hairpins of this type were used throughout the Roman period.

Toilet items

20 ON 3967. Nail cleaner and ear scoop. The nail cleaner has a moulded handle with loop at the top and rocker

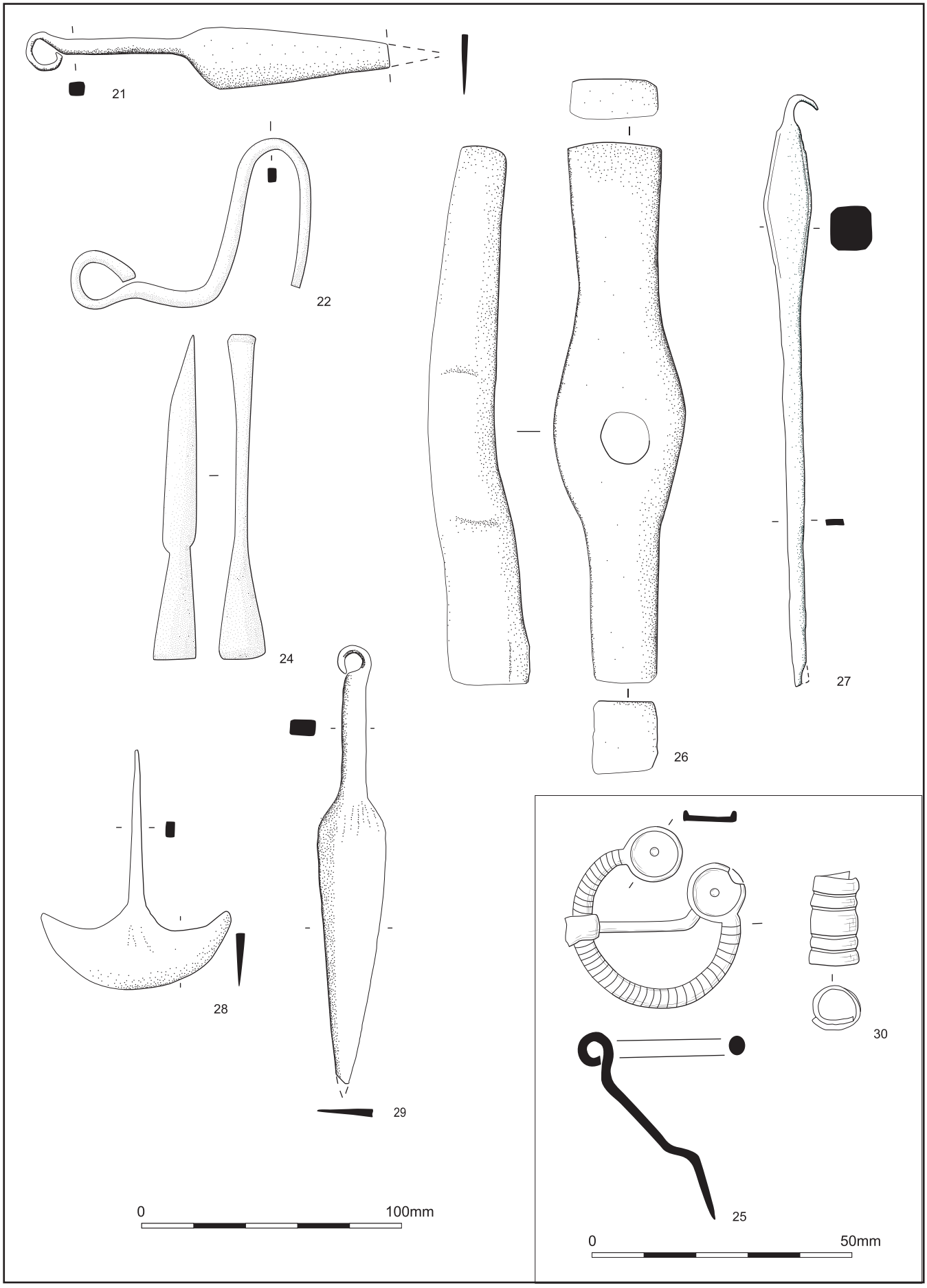


Fig 4.122 Selected metal objects Nos 21–22 and 24–30

decoration down the centre of the blade. The scoop is quite plain. Found together. Cu alloy. Context 327031, pit 327030. Middle Roman.
A toilet set comprising a plain ear scoop and a nail cleaner with leaf-shaped blade and moulded neck. The nail cleaner is comparable to an example from Canterbury (Garrard 1995, 1013, fig 426, no 298) and belongs to Eckardt and Crummy's Group of cast nail cleaners with moulded necks and shouldered blades (Eckardt and Crummy 2008, 121, fig 59). These nail cleaners are a 1st-century AD type, and examples have been recovered from pre-Flavian contexts, although others have been found in much later contexts.

Household

21 ON 326. Knife with solid handle with looped terminal. Fe. Context 130010, colluvium.

22 ON 3960. Key fragment, comprising S-curved bar with rolled over loop at one end. Fe. Context 319041, pit 319034. Early Roman.
This appears to be a fragment from an unusual key with a strongly curved stem comparable to examples from the oppidum of Stradonice (Czech Republic) (Pi 1906, pl xxxii, nos 6–10; see also Déchelette 1914, fig 619).

Zone 12

23 ON 1400 Pl 4.31). Iron tyre. The tyre has a plano-convex cross-section. Fe. D: 950 x 920mm; W of tyre: *c* 40mm, W of tyre at joints: *c* 45mm. Context 238014, feature 268010. Roman.

Zones 13/14

24 ON 4568. Mortice chisel, socketed, with closed socket. Fe. Context 191127, sunken-featured building 191125. Early Roman.
Parallels for this distinctive chisel form have been found at Bibracte (Mölders 2010, 51, 111, fig 50, no 68), Stradonice (Pi 1906, Taf 38, no 22), Sanzeno (Trentino, Italy) (Nothdurfter 1979, 29, 119, Taf 8, nos 144–5) and in the Roman metal find from Augsburg-Oberhausen (Hübener 1973, Taf 19, no 29). Mölders (*ibid*, 176) cites further examples and dates this form to the late La Tène (La Tène D) or Augustan periods (2010, 164). There are examples of this form of chisel from Manching (Bavaria) but these have solid handles rather than sockets for wooden handles (Jacobi 1974, 23–4, Taf 6, nos 75–6). The presence of a socketed handle or solid handle together with the strong but narrow blade and cutting edge confirm that these are mortice chisels.

Zone 19

25 ON 1204. Penannular brooch with hoop of oval section decorated with transverse mouldings on outer face. Has large circular terminals recessed for inlay now lost. The pin is bent and has a decorated attachment loop. Cu alloy. Context 126162, ditch 126170. Early Roman.
A similar but smaller penannular brooch (ON 887) was found in Zone 5 in pit 254114 , which is phased to the Middle Iron Age.

Zone 20

Tools

26 ON 3195. Smith's hammer, with almost circular eye, and a small square face and a cross pane face. Fe. Context 271053, sunken-featured building 249081. Middle Roman.
See examples from Vertault (Côte d'Or) (Tisserand 2010, pl 1, nos 4–5).

27 ON 3184. Tanged paring chisel with long slim blade. Fe. Context 271051, sunken-featured building 249081. Middle Roman.
Compare an example with a maker's stamp from the Walbrook, London (Manning 1985, 21–2, pl 10, no B25).

28 ON 3745. Lunate knife with tang of rectangular-section. Fe. Context 205166, sunken-featured building 249083. Late Roman.
Leatherworking knife. See an example from Pompeii (Gaitzsch 1980, Taf 37, no 176; see also *ibid*, 122–5 and Abb13; see also Tisserand 2010, 254, fig 5 and pl 2).

29 ON 3111. Knife with leaf-shaped blade, almost complete, handle rectangular sectioned with small rolled-over loop at the end. Fe. Context 228068, sunken-featured building 228059. Middle Roman.
Leatherworking knife? See an example from Vertault (Côte d'Or) (Tisserand 2010, pl 2, no 26), and another from Vindonissa (Switzerland) with similar leaf-shaped blade but twisted handle (Gansser-Burckhardt 1942, 18–9, Abb 7, no 23:732).

Personal

30 ON 3789. Possible bead or amulet formed from a cut and rolled fragment of moulded strip. Possibly a fragment of a broad armlet. Cu alloy. Context 279031, pit 279028. Middle Roman.
This is further evidence for the reworking or recycling of artefacts and in particular the re-use of cut down bracelets and armlets (see Cat nos 14 and 15 above). In this instance the possible armlet fragment has been quite carefully rolled to make a neat bead or amulet.

Late Iron Age and Roman pottery

by Rachael Seager Smith

Late Iron Age (*c* 100/80–1 BC)

This period witnessed a continuing reliance on locally produced ceramics, although a steady decline in the importance of flint temper was apparent, in favour of sandy and grog-tempered fabrics. The range of mixed-tempered wares remained largely unchanged while a small number of sherds containing glauconitic sand were also recognised. Continental imports were restricted to a handful of Dressel 1 wine amphora sherds.

Vessel forms consisted of pedestal urns, necked, cordoned jars, jars and bowls with rippled or corrugated shoulders, a wide range of bead rim jars, small, plain, everted rim jars and large, necked or bead-rimmed storage jars. Although initially hand-made, later tournetted or wheel-turned examples were noted; surface treatments continued to be dominated by scratched or scored exterior surfaces, while burnishing became increasingly common. Decoration continued to be rare.

The most significant groups belonging within this period derived from Zones 12 and 13, in particular, pits 156146, 156166 and 203056 and enclosure ditch 134099. In Zones 6 and 7, pieces of this date occurred residually and/or in very small groups, perhaps implying a hiatus of activity within the immediate confines of the site at this time.

Latest Iron Age and Roman (*c* AD 1–410)

The Roman military campaigns of 55–54 BC and AD 43–47 had little immediate impact on the local material culture, and ceramically the Late Iron Age/early Roman transition is characterised by continuity rather than change. Up to about AD 70, sandy, sand and flint-tempered and flint-tempered fabrics of Iron Age character continued alongside the more numerous 'Belgic' grog-tempered wares. Vessels were mostly wheel-made or at least wheel-finished; forms were dominated by necked, often cordoned, and bead rimmed jars, along with a smaller range of necked, cordoned bowls and lids. Other, less common forms (eg imitation Gallo-Belgic platters, bowls, cups, butt beakers and pedestalled vessels) emphasised the increased cross-channel contacts available at this time. Early imports included wine amphora from the Mediterranean region and Gallo-Belgic wares (Terra Rubra, Terra Nigra and whitewares) from northern Gaul.

Conversely, there was nothing convincingly early amongst the samian assemblage; only one piece spanned the conquest period (*c* AD 45–55) and the range of pre- or early Flavian Southern Gaulish forms was small. Other pre-Flavian finewares included Lyon and Central Gaulish colour-coated wares and Pompeian red wares. Most of the South Gaulish samian was Flavian. Terra Nigra also continued into the latter part of the 1st century AD, while colour-coated ware beakers arrived from Central Gaul and the Argonne region *c* AD 70–135. Les Martres-de-Veyre samian also reached the area during the first quarter of the 2nd century AD while one vessel (Fig 4.104, ON 3808), in a micaceous, 'pre-export' Lezoux ware fabric, is probably of Trajanic date. Coarsewares remained dominated by grog-tempered wares but the early Roman assemblages were further characterised by gradually increasing quantities of sandy greywares from the Thameside industry and local sources. By the late 1st century AD these were supplemented by oxidised and reduced sandy wares from the Canterbury kilns. Beakers and a range of other 'tableware' forms (jars/bowls, dishes and cups) were especially popular in the fine, 'Upchurch' type greyware fabric, although some may have been locally made. A small number of other early finewares, flagons and mortaria were obtained from the London area (ring-and-dot beakers, mica-dusted and marbled wares, Verulamium-region whitewares). Other imports included mortaria and flagons from northern France, while amphorae indicated the presence and use of olive oil (Dressel 20), fish-based products (Cam 186), olives (London 555) and wine (Dressel 2–4 and flat-bottomed Gallic amphora) during the late 1st and early/mid-2nd century AD.

From the Hadrianic period to the end of the 2nd century AD, most of the samian, including a rare handled beaker of Déchelette form 74 (Fig 4.105, Pl 4.33, ON 4031), in the so-called 'black samian' fabric, was from Lezoux. Other imports included Cologne colour-coated wares, Central Gaulish black slipped ware (*c* AD 150/160–200/250) and Moselkeramik (*c* AD 200–250/300) beakers, while East Gaulish samian of late 2nd–early/mid-3rd century AD date derived from the Rheinzabern, Trier and Argonne kilns. A few mortaria were imported from the Rhineland, but after *c* AD 130/140 sources of supply were mainly local with vessels from Colchester and a variety of unlocated centres, known collectively as Canterbury/Kent. After about AD 120/130, fine greyware beakers and coarser,

Pl 4.33 'Black samian' handled beaker from grave 215193 (Zone 20)

Pl 4.34 Double-handled greyware jug 42003 from grave 42001; the neck of the vessel had been removed to insert the cremated bone, and then replaced (Zone 10)

'BB2'-style greyware vessels were obtained from the Thameside industry; the latter were probably copied locally. Production of Canterbury sandy wares seems to have ceased by the third quarter of the 2nd century AD, but medium-quality, oxidised and greyware vessels for use in a variety of serving and storage roles continued to be obtained from unlocated, yet probably fairly local sources (Pl 4.34). Part of a finely-rilled costrel (Vol 2, Fig 9.9, 87), probably of 2nd-century AD date, made in a hard, fine, almost inclusion-free cream fabric was found in Zone 10, and may be an import associated with the military. From the late 2nd century onwards, the grog-tempered wares gradually became harder-fired, more commonly oxidised and sometimes white-slipped, these 'native coarse wares' continuing into the middle of the 3rd century AD.

Although most of the site assemblages appear to have terminated by the middle of the 3rd century AD, late Roman ceramics were associated with settlement features and burials in two locations on the route (Zones 6 and 20) and with burials alone in Zone 10. From the late 3rd century AD onwards, the grog-tempered wares shared features common to these fabrics across much of southern England, reverting to being hand-made and the darker colours of preceding centuries while remaining moderately hard-fired. Oxidised and reduced sandy wares continued to be important components of the assemblage, but local products were supplemented by vessels from further afield, particularly the Alice Holt and south-east Dorset Black Burnished ware industries. These expanded trading networks, perhaps associated with the demise of the Thameside industry, were further evidenced by mortaria and other tablewares from the Oxfordshire, Hadham, Nene Valley and New Forest industries. Olive oil and/or fish products from North Africa (cylindrical amphora) and possibly olive oil from Spain (Dressel 23) also reached the area.

Repair

Extensive evidence for the repair of ceramic vessels using an adhesive probably derived from birch bark tar was also encountered within the assemblage. This survives as thick, dark greyish brown or black resinous deposits on the broken edges of sherds and/or along the margins of the break. At least 40 examples were identified, found in Zones 3, 10, 11, 13 and 19, although 29 examples were from Zone 6. The earliest is likely to be of Late Bronze Age/Early Iron Age date (Zone 6, Early or Middle Iron Age ditch 302123), while 15 others, all made to local coarseware vessels, spanned the rest of the Iron Age. The 24 Roman examples were predominantly of 1st- or early 2nd-century AD date and were made to a wide range of coarse and fine ware fabrics including a Cam 186 amphora (waterhole 135095, Zone 11), while three vessels from graves (Fig 4.42, ON 439; Fig 4.76, ON 2074; Fig 4.79, ON 3617) indicated that these repairs were often extensive and acceptable for use in burial contexts (Pl 4.35). This forms the second largest collection of glued repairs known to date, and firmly anchors the origins of this practice, currently best-known from Roman Kent (although by no means confined to the county), in the earlier part of the Iron Age. Although growing in the vicinity, no physical evidence for processing birch bark was recovered on the EKA2. Fourteen other Roman vessels, mostly coarse-wares but including two of samian and one of Oxfordshire red colour-coated ware, had been repaired using metal staples or rivets.

Distribution

Approximately half the Roman assemblage derived from the extensive and long-lived settlement at the neck of the Ebbsfleet peninsula (Zones 4–7). However, extensive mixing and residuality, resulting from the density of occupation and the continual reworking and redeposition of material, was apparent within the ceramics of all periods from this area, limiting the

Pl 4.35 Extensively repaired grog-tempered jar from grave 279096 (Zone 19)

Pl 4.36 Pottery vessels in early Roman grave 147141 (Zone 11)

potential of the collection. However, significant groups were recovered from burials and sunken-featured buildings as well as numerous isolated pits and ditches spanning the entire period.

Elsewhere, the Middle Iron Age settlement on Foads Hill (Zone 13) continued into the middle Roman period, with significant groups derived from pits and two sunken-featured buildings. The pottery from Zones 10 and 11 on the Sevenscore scarp also indicated continued settlement into the late 2nd or early 3rd century AD, although late Roman ceramics were almost entirely absent. Nineteen complete or semi-complete vessels deliberately deposited in graves were included in this assemblage, the earliest comprising a group of four pre-conquest, Gallo-Belgic vessels, while two graves included late 3rd or 4th century AD vessels (Pl 4.36).

Along the chalk ridge, Iron Age and Roman settlement features, including sunken-featured buildings, together with trackways and two cemeteries, spanning the entire Roman period were identified on Thorne Hill (Zones 19 and 20). Graves in this area included 54 deliberately deposited vessels.

Only negligible quantities of Roman pottery were recovered from the sites on the Ebbsfleet peninsula (Zones 1–3), Cottington Hill (Zones 8 and 9), the top of the Sevenscore slope (Zones 17 and 18) and on Laundry Hill (Zones 21 and 22) and Telegraph Hill (Zones 23–25) towards the western end of the chalk ridge, reflecting the absence of settlement in these areas.

Fired clay *by Cynthia Poole*

As in earlier periods, Zones 6 and 13 remained the principal areas producing fired clay, with smaller quantities from adjacent zones, and the addition of material in the northern area of the scheme from Zone 20 and to a lesser extent Zone 19. Briquetage and associated furniture exhibited a similar pattern, with additional smaller but significant groups from Zones 10 and 11. In the Late Iron Age the volume of material is similar to the preceding period (15.3kg) but more fragmented (2093 fragments). The largest quantity of fired clay derives from early Roman deposits (2191 fragments, 27.9kg) with a decrease in the middle (942 fragments, 13.5kg) and late Roman periods (256 fragments, 4.2kg), possibly reflecting the greater availability of tile, which could be used in oven and hearth construction and as substitutes for furniture. This is supported by the tile evidence which shows that 92% of the tile found in Roman phased deposits was in contexts of middle and late Roman date in contrast to 6% in early Roman or unspecified Roman contexts.

The character of the Late Iron Age and early Roman assemblage is similar to that of the Iron Age, suggesting there was little change in the construction of ovens and hearths: oven and hearth floor, oven wall, oven plate and wattle-supported panels all continue to feature in the record. Oven furniture consists predominantly of triangular bricks and curved pedestals. A group of broken triangular bricks was found in Zone 13 in pit 156146 together with fragments of oven plate and hand-squeezed lumps. The triangular bricks were noticeably larger than the Iron Age examples, measuring 75–104mm wide, and the more compete example had sides 170–200mm long. Perforations were also larger at 10–15mm diameter. Fragments of triangular bricks from other features were poorly preserved but sizes of 50–70mm thick and *c* 120–150mm long are closer to the preceding Iron Age measurements. Cylindrical pedestal fragments have diameters of 75–150mm. Other furniture included discs or plaques, oven plate, a fire bar fragment 35mm in diameter, and hand-squeezed lumps.

Briquetage and salt working material is similar to the Iron Age assemblage and indicates that the character of the industry remained similar in the general production process, though increasing in intensity of production. Briquetage vessels were most commonly represented by cylindrical vessels (V1) found in Zones 6, 10 and 13, whilst rounded bowl type vessels (V3) were less common, occurring in Zones 6 and 10. Curved sherds of indeterminate form were more common than flat sherds. The small number of flat sherds suggests that some sort of troughs or trays were in use, though the form or size could not be defined. Furniture included tongue-shaped clips, small pyramidal pedestals or pinch props, larger cylindrical pedestals, triangular perforated bricks and single examples of a flat slab, plate, hand-squeezed brick and a biconical pedestal. Structural material specifically associated included oven or hearth wall, lining, and a large block of floor with green glaze from a late Roman ditch (217122) in Zone 20.

The character of the briquetage assemblage suggests that there was little change in salt production technology from the Iron Age and it appears to have little in common with briquetage from other areas of Kent (Miles 1975). There is no evidence for specialised salt production hearths, suggesting that production continued as a small scale-cottage industry utilising domestic hearths or ovens for production. The increase in production in the Roman period may indicate that the industry changed from supplying only local households in the Iron Age to producing a surplus to trade over a larger region. However, the increase may merely reflect growth in population with households producing salt for their own use and that of the immediate community. The amount of material does not compare to the industrial quantities produced at the Essex red hill sites, and if production supplied more than the local area it is unlikely to have been on more than a regional scale.

Several oven and hearth bases were preserved in Late Iron Age and Roman structures in Zones 6, 13 and 20, mostly surviving in sunken-featured buildings (SFB), where structures built at floor level survived without suffering total truncation. One of the best preserved was an unusual L-shaped oven 193070 of middle–late Roman date set into the corner of SFB 249085. It had a lower chamber with walls constructed of clay and reinforced with stone slabs in the main firing area at its west end. Large quantities of fired clay and tile were recovered from the fill of the oven and the sunken-featured building indicating that the structure had an upper chamber with

a floor constructed of tegulae and bricks inset into the walls. Fired clay mixed with large quantites of straw may have been derived from the dome, though it is possible the upper chamber was only semi-enclosed.

A clue as to the function of this oven is provided by a small number of fired clay artefacts from layer 114132, which included a sherd of briquetage vessel, a fragment of firebar or pedestal and a small pedestal or pinch prop (Vol 2, Fig 12.12, 26). There were also fragments of oven lining coloured pink and lavender and typically associated with salt working. It is interesting that some part of the salt production process was undertaken at some distance from the sea, this site being situated 2.5km from the Roman coastline. It is most likely that the secondary stage of drying and packaging salt for redistribution was undertaken here, following primary evaporation on the coastal area. However, salt production may not have been its sole use and other products could have been dried and processed.

Ceramic building material *by Cynthia Poole*

Roman tile amounted to 629 fragments (64kg) and was represented by tegula, imbrex, flue tile and brick, together with a high proportion of undiagnostic flat tile. Though abrasion was low or absent, preservation was generally poor with a fairly low mean fragment weight of 101g; no complete tiles were present. Over three quarters of the Roman tile was found in Zones 20 and 6, with all other zones producing 3% or less of the Roman assemblage.

Eight fabrics were identified, of which two very similar red slightly sandy fabrics (B and D) probably derived from the brick earth. A few examples of a cream calcareous fabric (A) of 3rd–4th century date were also present. All the tile was of the most common standard forms. Tegulae dominated the assemblage and were the only tiles to produce complete dimensions other than thickness, with lengths of 410–450mm and widths of 350–390mm. Flange profiles were of the most common rectangular and rounded types. Lower cutaways were almost entirely of Warry's (2006) class C (type 5) apart from one in his class D (type 1) and two of class B (type 6). According to Warry's analysis of cutaway forms the majority of the tegulae would date to mid-2nd–mid-3rd century AD. Indeterminate flat tile and brick formed roughly equal proportions of the assemblage. The brick was probably mostly bessalis, pedalis or lydion fragments. Imbrices and flue tiles were both very sparse. Keying on the flue tiles was in the form of straight bands of coarse combing except for one piece with knife scored keying. Markings on the tile were sparse and included signature marks, all of the simplest curved hoop form, and imprints of hoofs and a child's foot.

The overall character of the Roman tile assemblage is similar across all areas of the EKA2 and the overarching theme is the deliberate collection of tile for reuse. The range of roofing tile, brick, flue tile and a single tessera certainly points to the existence of a building of some standing with heated rooms in the area, which served as a source for the tile, but this is likely to be one of the known local villas, most probably that at Minster, rather than an unknown building just outside the excavations. The proportions and quantities of tegulae and imbrices are not indicative of their use as roofing within the excavated settlements, nor is there any reason to suppose that the other forms of tile were used for their primary purpose. The precise mechanism whereby inhabitants of a lower status site obtained tile is not known and could depend on the site's relationship to villa estates in the area and whether it was dependent on a villa, for example housing estate workers, or whether the settlement was entirely autonomous. Tile was an expensive commodity and it is unlikely that it was bought new. Tile was recycled even on villa sites, where tegulae and imbrices were frequently reused in subsurface structures such as pilae and flues of hypocausts, for lining and covering drains and conduits to and from bath houses, as well as in other structures such as corndriers. Tile is most likely to have become available when a villa building was being refurbished, undergoing repairs or after it had been abandoned. Whether there was a formal trade in recyclable building materials is uncertain, though it has been suggested for London and also Cirencester (eg, Poole 2010b, 164–5). Outside of urban areas the means of obtaining brick and tile may have been less formal, perhaps dependent on implicit or explicit permission of villa owners allowing estate workers to make use of surplus or disused items, whether at a price or as a perk of their work belongs even further in the realms of hypothesis.

The incentive for obtaining brick and tile in these lower status settlements, on the basis of the high incidence of burning on the tiles, appears to have been primarily the construction of ovens, corndriers and hearths. The use of fired clay in such structures and specialised fired clay oven and hearth furniture decreases significantly during the Roman period as tile became more readily available. The assemblage is characterised by a deliberate selection of bricks, tegulae and flat tiles that could be used as general purpose building material in the manner of brick. There would also appear to be a preference for the smaller sizes of brick, which would have been more practicable for minor structures.

Evidence for use in ovens and hearths occurs as direct burning, sooting and heat discolouration on 70% of the tile, which included all the tile types, whilst burning was absent on 200 fragments, though tile built into the core of a clay structure and not exposed directly to the heat source may not exhibit any visible discolouration. There is a considerable range in the patterns of burning. Pieces burnt grey on just one surface with little or no effect on the core were probably used as hearth floor. Pieces with burning just along the edge were probably built into the wall of an oven or flue with just the tile edge exposed in the face of the structure. Tiles that have been discoloured from refiring but with no evidence of direct burning were probably built into the body of a clay structure or only exposed in the cooler areas of the structure. Tiles that were heavily burnt and blackened, especially throughout the tile thickness, would have

been used in the arch over the flue, as flue cheek pieces or as suspended floor. Some of the most intensely burnt pieces may have been used in kilns or furnaces rather than domestic or agricultural structures. Heavily burnt tile may also have been built into a pedestal and exposed to the heat at the front of the structure. Tiles with patchy discolouration or sooting probably served as furniture within an oven or hearth being covered by other objects and only partly exposed to the heat. One brick from a sunken-featured building (249085) in Zone 20 was burnt on the edge and in a distinctive margin alongside on the top face suggesting that it had been partly projecting from the structure, perhaps forming part of a vaulted dome. Pieces with a patch of burning or sooting on just one side may have been used to cover a vent or flue to control air flow.

In Zone 20 over two-thirds of the tile was found in five sunken-featured buildings (SFBs 228059, 249049, 249081, 249083, 249085), whilst the remainder was found in ditches, pits and miscellaneous features. The concentrations in the sunken-featured buildings suggest that these structures were a primary area where the tile was used, confirmed by the presence of *in situ* ovens in SFBs 228059 and 249085 and hearths in SFBs 249081 and 249083. These were constructed on the base of the sunken-featured building perhaps implying that elsewhere any such structures were constructed on the ground surface with no subsurface element and hence only survive as demolished debris.

In Zone 6 tile was discarded in a much wider variety of structures including sunken-featured buildings, ditches, gullies, pits, quarries, a waterhole, a hollow-way, a hollow and a well, but with no emphasis on any one particular feature type. The same pattern of deposition occurred in the other zones, reflecting the final resting place of the tile probably following constant reuse until it became too small to be useful.

Utilised stone *by Ruth Shaffrey*

Querns

Querns were recovered from a total of 61 Roman contexts and four unphased contexts and include both hand querns and mechanically operated millstones. They are described in detail in the full report (Volume 2, Chap 6) and only summarised here. Four of the major Kent quern lithologies are present, of which Puddingstone is least numerous, as would be expected in East Kent. The other quern stone types are Lava, Millstone Grit and Folkestone Beds Greensand, of the same type as that used for querns from earlier phases. It is not possible to directly compare the quantities of querns used as the lava is highly fragmented.

Fragments of Greensand quern were produced from a total of 13 Roman contexts with a further four unphased examples of Roman form. Of all the stone types used for querns along the EKA2, Greensand demonstrates the most variation in form suggesting the longest period of exploitation and manufacture. Of the 17 querns represented, two are of typologically early forms (a rubber and a saddle quern), and there are three lower rotary querns, eight upper querns and four indeterminate fragments. The form of the rotary querns also varies and includes some of Roman Kent 1 type (eg, ON 4710, Fig 4.123, 1) (Blanning 2006, 11). There are also two examples of possibly unfinished querns (eg, ON 4037, Fig 4.123, 2)

Three examples of puddingstone querns were recovered, one of Hertfordshire Puddingstone type and two of ferruginous puddingstone. The two querns of recognisable form are both beehive querns and, as expected for puddingstone, of 1st-century date (Zones 6 and 20). Hertfordshire Puddingstone usually occurs as single finds in this part of Kent (Green 2011, fig 1) whilst the ferruginous puddingstone is typical of those from the extensive collection recovered at Springhead (Shaffrey 2011b).

The excavations produced 30.5kg of lava quern from 59 contexts, of which 31 are Roman in date. This material is, without exception, degraded and in some cases crumbling almost into dust, with the result that the fragment count of 929 is virtually meaningless. The majority of fragments were found in Zones 14, 20, 6 and 11 respectively.

Fragments of Millstone Grit rotary querns were recovered from 11 Roman contexts and include three examples of mechanically operated millstones (with diameters of 670, 750 and 800mm). Millstone fragments are relatively common finds in East Kent and on Thanet and as their existence indicates larger scale, possibly centralised processing, their interpretation is crucial. As evidence for only three millstones was found, and there was no structural evidence, it cannot be assumed that a mill was located on the site. A single pair of large millstones could be broken up into 10, 20 or more fragments and reused once or several times, for example as building material or as hones. The fragments could thus have been redistributed as a commodity in their own right and possibly moved well away from the mill. Bearing this in mind, the mill may have been some distance from the EKA2, with one possible source being the well-documented watermills at Ickham (Bennett *et al* 2010), located only 15km to the west of the site.

Only three querns could not be attributed to any of the major stone types used for querns in Roman Kent; none of these were diagnostic fragments and it is possible that they served some other purpose. One fragment is a pale quartzitic sandstone, possibly a type of Greensand (291096). The second is a ferruginous shelly grit stone, possibly also from the Greensand (178321). A third fragment is a medium grained well-sorted sandstone, possibly Triassic and of unknown origin (277025).

Catalogue of illustrated querns

Fig 4.123

1. Upper beehive rotary quern, complete. Greensand, Folkestone Beds. The entire top is a steeply sloping hopper down to cylindrical hole. Pecked all over except where there are crudely incised segmented grooves on the grinding surface. The sides are curved and steep with a

single small sub-triangular handle socket 25mm wide. The iron rim of spindle remains in eye and juts out over grinding surface due to wear. The circumference is chipped. Measures 350mm diameter x 98mm thick. ON 4710. Zone 7. Ctx 201078. Colluvial layer.

2. Complete upper rotary quern. Greensand, Folkestone Beds. Roughly worked all over with small basin-shaped hopper and flat grinding surface. Eye is narrow (26mm) and cylindrical. There is no handle socket. Measures 280mm diameter x 105mm thick. ON 4037. Zone 4. Ctx 172144. Subsoil. Unphased.

Other worked stone

In addition to the querns, the worked stone assemblage includes tools and structural stone. The tools include whetstones, polishers, pestles, weights and spindle whorls while the structural stone comprises pivot stones and flooring as well as more decorative pieces such as *opus sectile* and marble wall veneer.

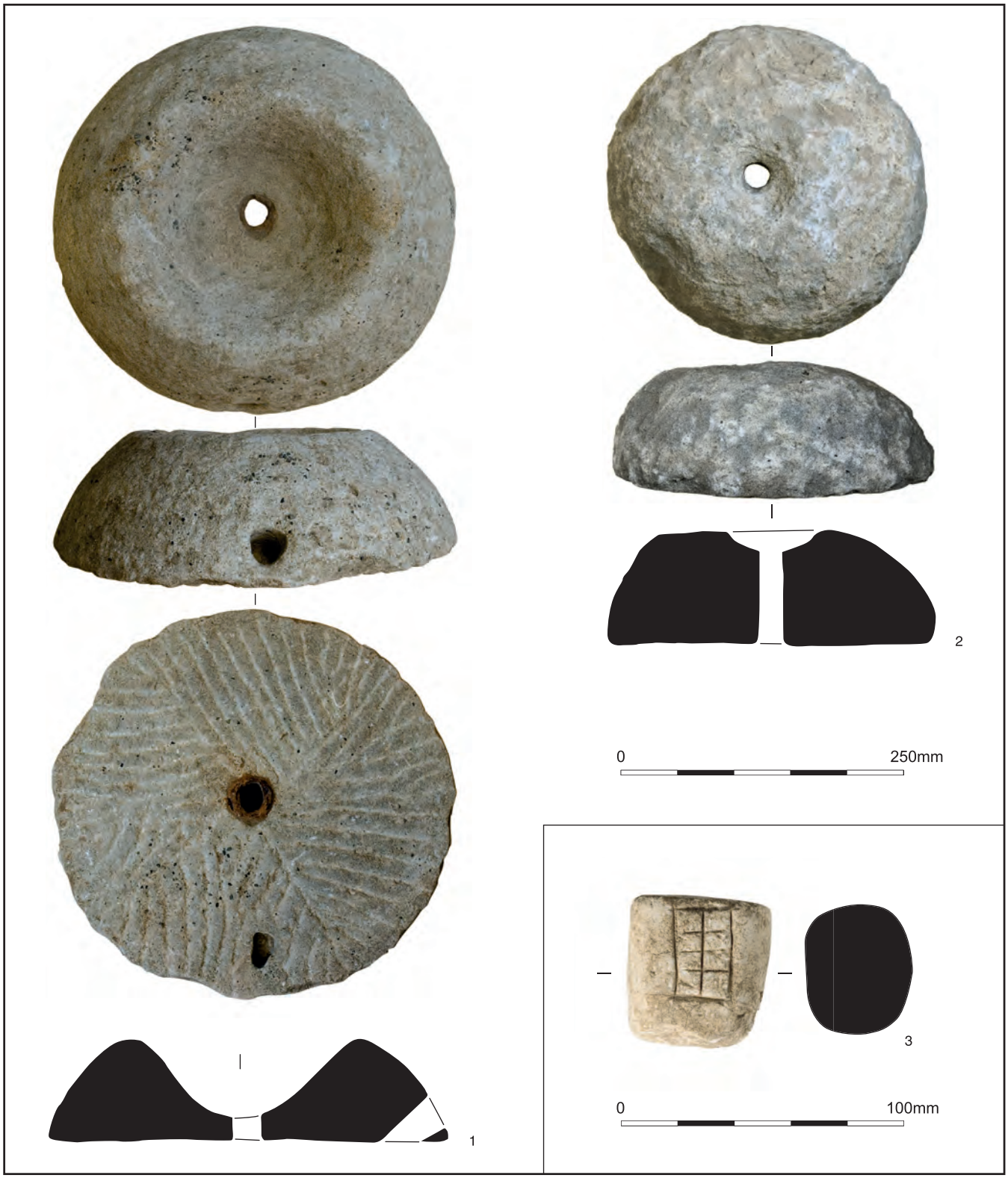


Fig 4.123 Selected worked stone objects

As with earlier phases, several tools are made of easily available chalk including a large oblong weight (ON 2094), two perforated discs (Zone 13) and a probable pestle. The discs are of slightly irregular form but may be spindle whorls, and if so, they probably indicate domestic spinning. Zone 12 produced a piece of worked chalk with tool marks on it that is possibly debris and indicates that chalk artefacts were made where they were going to be used (137033). The possible pestle is cylindrical with a flat base (ON 1518, Fig 4.123, no 3). It is incised on one side with a rectangular pattern divided into eight, similar to a carved piece of chalk from Lord of the Manor, but in a far simpler form (Longworth 1995). Although chalk is an easy material to carve, decorated chalk items are not common, suggesting that this item was of particular significance to the person who owned and used it.

Six stones were utilised as tools for polishing or sharpening. One of these is a primary whetstone: a stone shaped deliberately and then used (ON 4164). The remaining processors use pebbles or stones that have not had their shape humanly modified other than through use (ONs 4206, 3965 and contexts 124157, 230093). A pebble with a single polished face may have been used as a pot burnisher (291127).

Structural stone includes two pieces of white marble from late Roman ditch 217122 in Zone 20 and middle Roman pit 247139 in Zone 6. They have smooth but not polished faces and may have been wall veneer. Other flat slabs of stone may have been utilised as flooring. These include naturally slabby stone (eg, 145076) that is otherwise unshaped and a neat, triangular piece of very fine-grained sandstone found in Zone 20 in SFB 249083 (171228) that could have been used in an *opus sectile* floor, although it is residual in its context here. The use of *opus sectile* was relatively short-lived and probably out of fashion by the 2nd century AD (Pritchard 1986, 182–5). Finally, a large block with square edges and a worn circular basin was probably a socket stone (246170).

All the worked stone probably represents small-scale activities associated either with food preparation or more generally with domestic occupation. Few items amongst the assemblage are of high quality, although the decorated pestle (discussed above) is a notable exception. The possible *opus sectile* provides a hint that there were high status buildings nearby, as do the two fragments of marble; the villa at Minster is perhaps the most likely source. These represent the only 'exotic' imported stone across EKA2; most of the other stone types used would have been available either in the immediate vicinity (such as the chalk) or reasonably nearby.

Catalogue of illustrated worked stone

Fig 4.123

3. Worked chalk, probable pestle, decorated. Chalk. Cylindrical with oval cross section, flat base and broken top. One of the sides is incised with a rectangle divided into eight. Measures >50 x 46 x 40mm. ON 1518. Zone 13. Ctx 173199. Secondary fill of SFB 173201. Early Roman.

Other late Iron Age and Roman finds by Sue Nelson

A total of 81 beads was recovered from Zone 10, 79 of which came from a single grave (179267; Pl 4.8) of late Roman date. Nine of the beads from this grave are made of jet and the rest of monochrome glass. Very few other Roman beads were identified across the route. Only a small quantity of glass, other than beads, was recovered from all zones. The largest assemblage (17 pieces), virtually all vessel glass, came from Zone 6; all other zones produced five examples or fewer.

A relatively small number of worked bone objects were recovered, most from Zone 6 and, as is the case in the late prehistoric period, the majority were probably associated with textile production. They include four gouges and 'points', three pins and four handles.

Three fragments of a pipe-clay figurine were recovered from Zone 20 and one from Zone 6. The fragment from Zone 6 is probably part of a Venus figurine. The other three fragments all come from a late Roman sunken-featured building (249083) in Zone 20. Two are conjoining pieces and the other is almost certainly from the back of the same figurine, a Dea Nutrix (nursing goddess).

Very limited quantities of iron slag indicate small-scale smithing activity on or in the vicinity of Zones 6 and 20.

Human bone by Jacqueline I McKinley and Kirsten Egging Dinwiddy

The human remains have been summarised above and in Appendix 1, Tables 4.6–7; the full reports may be found in Vol 2 Chap 13.

Animal bone by Lena Strid

The Late Iron Age to Roman animal bone assemblages from Landscape 1 (chalk ridge) mainly date to the middle to late Roman period. By contrast, the assemblage from Landscape 2 (Cliffsend spur) only includes material of the Late Iron Age to early Roman period, whereas the assemblages from Landscape 3 (Ebbsfleet peninsula) include material from the entire range of Late Iron Age to late Roman periods. The assemblages from the three landscape areas are similar in species abundance. Domestic mammals, mainly cattle and sheep/goat, dominate the assemblage. Other taxa include pig, horse, dog, cat, domestic fowl, red deer, fallow deer, roe deer, large and small cetacean, goose, kite, raven, crow/rook, gannet as well as unspecified duck and wading bird.

Pig, red deer, fallow deer, roe deer, domestic fowl, goose, duck, wader, and possibly also the cetaceans, would have provided meat for the inhabitants. Hunting of wild game supplied only a very small part of the diet and this might have had more association with status than with food provisioning. A radiocarbon date of cal AD 1–220 (SUERC-40739) from a fallow deer antler from a ditch in Zone 20 confirms the presence of this

species on Thanet in the Roman period, whereas it has generally been thought of as a later introduction to this country. A sawn-off spur on a fowl tarsometatarsus suggests that cock fighting was a popular pastime.

A comparison of the assemblages by period shows that sheep/goat fragments increase in abundance from the Iron Age, mainly at the expense of cattle. Sheep/goat are particularly common in the early Roman period, but in the following periods their abundance recedes somewhat, although they are still more common than in the Iron Age. It is possible that the decrease in cattle in the early Roman period is not caused by a promotion of sheep/goat, but by the sale of cattle on the hoof to the nearby Roman military establishments. The early Roman forts would have depended on local trade for provisioning of meat, rather than depending on long-distance trade networks. Whether the return of a higher frequency of cattle in the later periods represents an expansion of cattle rearing to accommodate local needs as well as a high demand for livestock for trade to the urban and military markets is difficult to discern, due to the scarcity of comparative faunal remains studies from local forts or urban centres. It may reflect locally-driven specialisation such as the need for draught animals or an increasing emphasis on dairy production.

The animal husbandry strategies in the Late Iron Age and Roman periods follow the same pattern as in the Early to Middle Iron Age assemblage. Surplus animals, possibly mainly males, were killed in their first or second year for meat, whereas the remainder of the herd were kept for dairy production, wool production and breeding. Cattle were also used as draught animals. There is an increase in the number of very old cattle in the Roman period, suggesting an intensification of the utilisation of secondary products such as dairy production or the use of cattle for traction. The presence of juvenile bones from cattle, sheep/goat, pig and horse indicates that breeding of these animals took place at or near the settlements.

Roman butchery is associated with the dominant use of cleavers for disarticulation and filleting, as opposed to the Iron Age use of knives. However, this is mainly a feature of urban and military sites, where a high demand for meat required fast butchery techniques. On many rural sites, traditional Iron Age butchery techniques were still in use. Some of the urban butchery techniques have been found on rural sites, but it is unclear whether this signifies a dissemination of these techniques, mobility patterns of retired or itinerant butchers, or sale of meat cuts from urban centres. Viewing the assemblage as a whole, there is a small increase in the use of cleavers for cattle butchery and to some extent sheep/goat and pig butchery. However, knife cuts suggesting disarticulation and filleting are still very common throughout the Roman period. Blade marks from filleting with a heavy cleaver occurred mostly on cattle long bones in the middle Roman assemblage, but two cattle bones in the early Roman assemblage were also affected. Otherwise filleting was mainly carried out with knives throughout the period. Perforation of scapulae from smoking or curing the shoulder was noted on one early Roman and one late Roman cattle scapula, as well as one middle Roman pig scapula. This is also a meat processing technique associated with urban and military sites, although it is the one most commonly found in rural assemblages.

The assemblage also included evidence for butchery of horse (middle Roman, late Roman) and dog (Late Iron Age/early Roman). Neither species was commonly eaten in Roman Britain, although the occasional use of horse and dog flesh for food or for medicinal or ritual purposes cannot be excluded.

Fish remains *by Rebecca Nicholson*

Relatively few fish remains (around 120 identifiable bones) came from feature fills that could be securely dated to the Late Iron Age or Roman period of occupation. The assemblage includes species which would probably have been caught in surface nets (herring, scad), fixed shoreline nets (flatfish), by inshore fishing using a hooked line (mature cod and smaller gadids, bass, rays, dogfish or other small shark) and by netting or trapping in coastal waters or freshwater streams (eel). Typically, outside towns and villas it appears that the Roman population ate little fish, and despite the proximity of the sea this seems to be the case here. Notable in the small collection are several bones from the skull of at least one cod well over 1m long from early Roman context 258190, a fill within ditch 249167 (Zone 6). Cod of this size are rare today but were much more common in the past. It is likely to have been caught in the open waters of the North Sea. Articulated head bones from a large sea bass were collected from Roman ditch 159230 (fill 222049), part of the ladder enclosure system in Zone 14. This fish is commonly found in small shoals close to rocky shores or in estuaries. Small flatfishes, particularly plaice and flounder, are common inshore fish regularly represented in Roman assemblages. Together with eel, also a common component of Roman fish assemblages, they can be found far up the tidal reaches in shallow and in brackish waters.

Backfill 172304 of middle–late Roman well 170184 in Zone 6 is likely to have contained faecal waste judging by the presence of amorphous mineralised concretions, seeds and a few mineralised fly pupae and puparia. This deposit included several small flatfish bones which appear distorted in a manner consistent with chewing and/or digestion.

Marine shell *by Rebecca Nicholson*

By the Roman period shellfish, particularly oysters and mussels, had evidently become an important foodstuff, and the quantities of securely phased shell (a minimum of 2727 recorded individuals) can be reasonably interpreted as kitchen waste from domestic consumption. Oysters from nearby Richborough were evidently of such quality that they were imported into Italy in the 1st century AD (Déry 1998, 104), but there is no evidence from the EKA2 of any specialised trade in

shellfish, although oysters exported live might leave no obvious archaeological trace.

The oyster shells were in relatively poor condition and a considerable range of shell shapes and sizes is present. Most shells are of the expected round-form of *Ostrea edulis* grown in sheltered bays or estuaries, but there are occasional long, oval-hinged forms, a possible indicator of growth in more turbulent conditions offshore. In a few cases shell growth appears irregular. Several shells exhibit a change of growth and shape mid-way through their life, which may have resulted from a deliberate change of habitat as part of oyster bed management, but is probably here more likely to reflect increased over-crowding in a natural bed. Where shellfish have been farmed a greater uniformity of shape and size could be expected, and a rather lower level of parasitic infestation and encrustation, so it is likely that these oysters have been collected from wild populations, with minimal levels of pre-selection being made during collection. The presence of some shells from dead animals suggests that unsorted oysters were brought to the site, and these may have been collected en-mass by raking in shallow or deeper water. A few oyster shells had other shells adhering, usually oysters but occasionally cockles or mussels, evidence that the oysters grew on a substrate peppered with other shells which may be an indication of deliberate placement of cultch (deposits of discarded shells and other hard substrates intended to encourage the development of oyster beds).

Mussel shells are common, and in some cases dumps of these shells were evident, for example, in context 157018 from Late Iron Age ditch 201048 in Zone 26. Sample 6845 (from Roman ditch 205059 in Zone 20) contained almost 450 valves in 40L of soil, of which over half were intact. Mussels are also the dominant shell type in samples 7602, 7603 and 7604 from fills within early Roman sunken-featured building 193140 in Zone 13, and were also frequent in a fill of probable Late Iron Age/early Roman pit 290181 in Zone 22.

Plant macrofossils *by Kath Hunter and Rebecca Nicholson*

Many of the samples dated to the Late Iron Age and Roman periods came from Zone 6, north of the Ebbsfleet peninsula, but mixing of the deposits, a result of the intensity of habitation in this area, meant that establishing clearly phased samples was problematic, and this reduced the number of samples identified as worthy of full analysis. As is typically the case on multi-period sites, an increase in charred plant remains, with cereal-rich samples throughout the later Iron Age–Roman period in particular, reflects the increasing production of cereals in the area. Twenty-three samples were recorded in detail, with one phased as Late Iron Age, six as early Roman, eight as middle Roman and one as late Roman; the rest of the samples bracketed more than one period within this range. The results indicate that spelt wheat increasingly became the dominant cereal cultivated during this period, although emmer is still present throughout. Spelt can be cultivated on heavier soils, which may indicate that new areas were coming into cultivation. Other crops such as six row hulled barley, oat, peas, beans and flax continue to occur in relatively smaller quantities than the glume wheats. The last three crops are probably under-represented in the assemblage, as they are less likely to have come in contact with fire during processing than are the cereals. Additionally, the use of wheat chaff as fuel may result in this resource being preserved in greater quantities than other cereal remains. Late Iron Age sample 8355 (context 178239, structure 154190, Zone 6) included floret bases from cultivated oats (*Avena sativa*), demonstrating the deliberate cultivation of this crop. The continued presence of scentless mayweed in the assemblages suggests that light soils were still being cultivated.

Sample 5395, from the lower fill of late Roman collapsed beehive-shaped oven 176181 (Zone 6), included wheat grain and chaff (all spelt), with a 1:1 ratio of grain to chaff. Roman feature 126175 (Zone 19), sample 7295, contained an abundance of silicified and charred wheat/barley awn with cereal lemma and palea fragments. Coupled with relatively little wheat, oat and barley grains, this may suggest that this is the remains of a fuel deposit associated with the use of what may be an oven or kiln. The deposit also contained a single flax seed and seeds from corn gromwell and scentless mayweed.

Charcoal *by Denise Druce*

Even though the two sunken-featured buildings included in the study came from slightly different time periods and different landscape types (middle–late Roman SFB 249083 from Zone 20, and late Roman SFB 170132 from Zone 6), all four of the assemblages from these features were dominated by blackthorn-type roundwood, including probable wild cherry. A couple of the fills also contained small roundwood from a number of other scrubby/hedgerow taxa, such as hawthorn-type, field maple, buckthorn and elder. Significantly, very few oak fragments were recorded from these features.

The fact that the two deposits from sunken-featured building 170132 were associated with a possible oven/kiln suggests that the charcoal probably represents fuel wood rather than burnt structural remains. The dominance of blackthorn-type, including wild cherry in the sunken-featured buildings may either indicate its deliberate selection, or that there was a very limited supply of other available woody taxa during this period. Wild cherry is not regarded as a typical wood for fuel, but its pleasant aroma when burnt is noteworthy (Edlin 1949).

Although the late Roman oven fill 289055 in sunken-featured building 170132 was similarly dominated by blackthorn-type, including positively identified blackthorn and probable wild cherry, it also contained fairly common oak and ash. Rare hawthorn-type charcoal and a fragment of indeterminate coniferous wood were also recorded in this feature.

Chapter 5

A New Phase of Settlement and Burial: the Anglo-Saxon Period

by Phil Andrews, Kate Brady, Matt Leivers and Gerry Thacker

Introduction

Anglo-Saxon features, virtually all of early Saxon (410–650 AD) or mid-Saxon (650–850 AD) date, were found mainly in three areas of the route, on the Chalk ridge in Zone 19 on Thorne Hill and in Zone 20 a little further to the west, on the Sevenscore slope below in Zones 10 and 11, and on the Cliffs End spur at Foads Hill in Zones 14 and 15. The principal remains comprise at least two cemeteries together probably spanning the mid-6th – late 7th/early 8th centuries, and two or more phases of settlement, of early–mid- and mid-Saxon date respectively, the mid-Saxon settlement associated with an adjacent cemetery of probable 8th-century date.

The earliest burials, at the east end of Zone 20, have been dated to the mid-6th century, with the latest interments in Zone 19 taking place in the late 7th or early 8th century. The burials may have belonged to two or possibly three individual cemeteries, within which some groupings could be discerned. Three Anglo-Saxon burials excavated in 1983–4, during the installation of a gas pipeline (Perkins 1985), also belonged to one of the cemeteries in Zone 19. None of the cemeteries was fully exposed, and it is clear that further burials lie beyond the limits of excavation.

All of the 54 burials in Zones 19 and 20 were inhumations and the majority of the graves were aligned approximately west-east, with minor variations presumably reflecting local topography and the course of an adjacent hollow-way or trackway running along the Chalk ridge. This trackway, perhaps originating much earlier in the Iron Age or Roman period, was possibly the most important factor in determining the location of the cemeteries. However, recent geophysical survey indicates that the westernmost cemetery may have been focused on an enclosure or ring-ditch of what is likely to have been an Early Bronze Age barrow immediately to the south of the EKA2 (see below). Grave goods were recovered from 40 of the graves with metalwork – the majority of iron – providing most of the artefactual evidence. A few burials contained weapons though little else, but some, mainly female burials had a wider range of objects, which may reflect wealth or status differences. Of interest was the evidence in a small number of graves for the stacking of burials and in others for the revisiting and disturbance of burials.

A small mid-Saxon cemetery in Zone 14 comprised 24 east-west aligned graves, only one of which contained grave goods.

Four Anglo-Saxon sunken-featured buildings were recorded, three in the central part of Zone 11, on the south-facing slope below the Chalk ridge, and one at the southern end of Zone 10. No ground-level post-built or beam slot buildings were noted close to them, and it is unlikely that structural features such as postholes have been entirely truncated. The dispersed group of three sunken-featured buildings in Zone 11 may have belonged to a single, short-lived settlement, or a succession of structures, rebuilt on different sites. Overall, the use of all four of the four sunken-featured buildings is likely to fall within the later 6th–7th centuries, broadly contemporary with the burials in Zones 19 and 20 on the higher ground approximately 0.75–1km to the north and north-west respectively.

The two areas of Anglo-Saxon settlement – in Zones 10 and 11 to the west and Zones 14 and 15 to the east – lay approximately 1km apart. As far as can be determined, there appears to have been no chronological overlap between these settlements, with that in Zones 14 and 15 of 8th-century date, possibly extending into the 9th. Within Zones 14 and 15, two separate areas of mid-Saxon pits are clearly apparent, lying almost 200m apart, with both groups of pits continuing beyond the northern and southern limits of the excavation area. The small mid-Saxon cemetery was associated with the western group of pits in Zone 14. No domestic structures were identified in Zones 14 and 15 but a number of postholes, most of them shallow and undated, may indicate post-built structures. A small amount of burnt daub was also recovered from several pits, though some of this may have derived from hearths or ovens rather than more substantial structures. Almost identical numbers of pits were exposed within the two groups, with 55 in the western group and 52 in the eastern group, most producing relatively few finds. Many, however, contained substantial deposits of marine shell and several hearths lay in the vicinity, providing evidence for the processing of a variety of shellfish apparently intended for redistribution and trade rather than on-site consumption.

Evidence for late Saxon activity is extremely sparse, the excavated remains restricted to a small group of pits in Zone 17. These pits contained pottery of late 10th–mid-

11th-century date and suggest settlement nearby on the south-facing slope below the Chalk ridge, but no structural remains were found. Several ditches/enclosures a little further down slope to the south, in Zone 11, have been dated to the 11th–12th centuries (see below), and probably indicate a continuation of activity from the late Saxon period in this area.

The principal sites

Early to mid-Saxon

Zones 9, 10 and 11

Close to the base of the Sevenscore slope in the southern part of Zone 10 was a sunken-featured building (194086), orientated roughly west-east, and extending in part to the west beyond the limit of excavation (Fig 5.1). The building's pit was steep sided, flat based and up to 0.23m deep. It measured 3.16m long (within the confines of the excavated area) and 2.93m wide. A single posthole was present within the eastern end, and would surely have been mirrored by another to the west. The fill of the posthole appeared to have been sealed by the fill within the remainder of the pit, perhaps indicative of the post having been removed as the building went out of use. Sunken-featured building 194086 was excavated in opposing quadrants, prior to complete excavation, and considerable numbers of oyster shells were recovered including at least one pierced example. In addition to the marine shell, finds included two partial iron knife blades (ONs 213 and 214), half a greenish-blue monochrome glass bead (ON 212) and 78 sherds of pottery. The pottery included Merovingian greyware imports, and dated to within the range of 575–750 AD.

Around 20m to the south-west of sunken-featured building 194086 was ditch 178358, notable because it contained relatively large quantities of oyster shell, unlike the sequence of Roman ditches that it cut. In addition, there were a pair of smith's tongs (ON 4217) laid flat in the upper ditch fill, and a minimum of four Merovingian greyware vessels were represented amongst the 27 sherds of pottery recovered.

Pit 197117, 80m north of sunken-featured building 194086, contained oyster, limpet, mussel and common whelk shells, and was dated on the basis of a single sherd of possible mid-Saxon pottery.

Towards the eastern end of the larger northern trench within Zone 9, two adjacent features are likely to represent the bases of hearths, or small ovens. Both were ovoid in shape and around 1.5m long, 0.8m wide and 0.3m deep with linings of burnt clay. The northern example, 197089, cut a Roman ditch but was not directly dated, whilst its counterpart 197092 contained three sherds of pottery of early or mid-Saxon date.

The combination of sunken-featured building, probable hearths and dumps of marine shell suggests that this area, at the base of the Sevenscore slope, may have been used for the processing of shellfish, albeit not on the same scale as the mid-Saxon shellfish 'industry' represented within Zone 14 on Foads Hill (see below).

Two or possibly three further sunken-featured buildings within Zone 11 may represent parts of a separate, dispersed settlement approximately 500m to the north-east of the Anglo-Saxon features in Zones 9 and 10. The largest possible example, 268011, in the northern arm of Zone 11, is less certainly identified as a sunken-featured building. Unlike the other two, which were aligned east–west, this was aligned NNE–SSW, contained no postholes and was unusually large at over 7m long, 4m wide and almost 1m deep; a tip line within the sequence of infilling contained oyster shell and four sherds from a globular bowl of probable early Saxon date.

Within the eastern arm of Zone 11 were two smaller sunken-featured buildings, 137083 and 196013, both aligned east-west. The more westerly of the two, 137083 (Figs 5.1–2) measured 4.52m long, 2.88m wide and had a depth of 0.26m. Two shallow, axial linear features in the base of the pit may have held timbers, perhaps to support a raised floor. A posthole was present at each end of the structure (137085 and 137089), but external to the pit, and two further external postholes (137091 and 137093) of similar size lay approximately midway along the north and south sides. Three pottery sherds of early or mid-Saxon date were recovered from the fill of sunken-featured building 137083.

Sunken-featured building 196013 measured 3.25m long, 2.3m wide and was 0.3m deep (Pl 5.1). Postholes were centrally placed at either end, just within the edge of the pit, and the western example had been replaced on at least one occasion. The single, homogeneous fill of the pit contained no datable finds, though there can be no doubt from its form that sunken-featured building 196013 was of early or mid-Saxon date.

Fifty metres to the east of building 196013 a large pit or possible well (189018) was cut by a ditch of likely medieval date, and contained further sherds of Merovingian pottery. This feature lay at the northern limit of excavation but it was fully exposed by further machining and excavations revealed a diameter of 1.67m and a depth of 1.36m. The majority of the fills were derived from the collapse of the feature edges and as such were very similar to the surrounding geology, but a tip line which sloped down to the east contained oyster and mussel shells and a single periwinkle.

Pl 5.1 Early Saxon sunken-featured building 196013 (Zone 11; view from south)

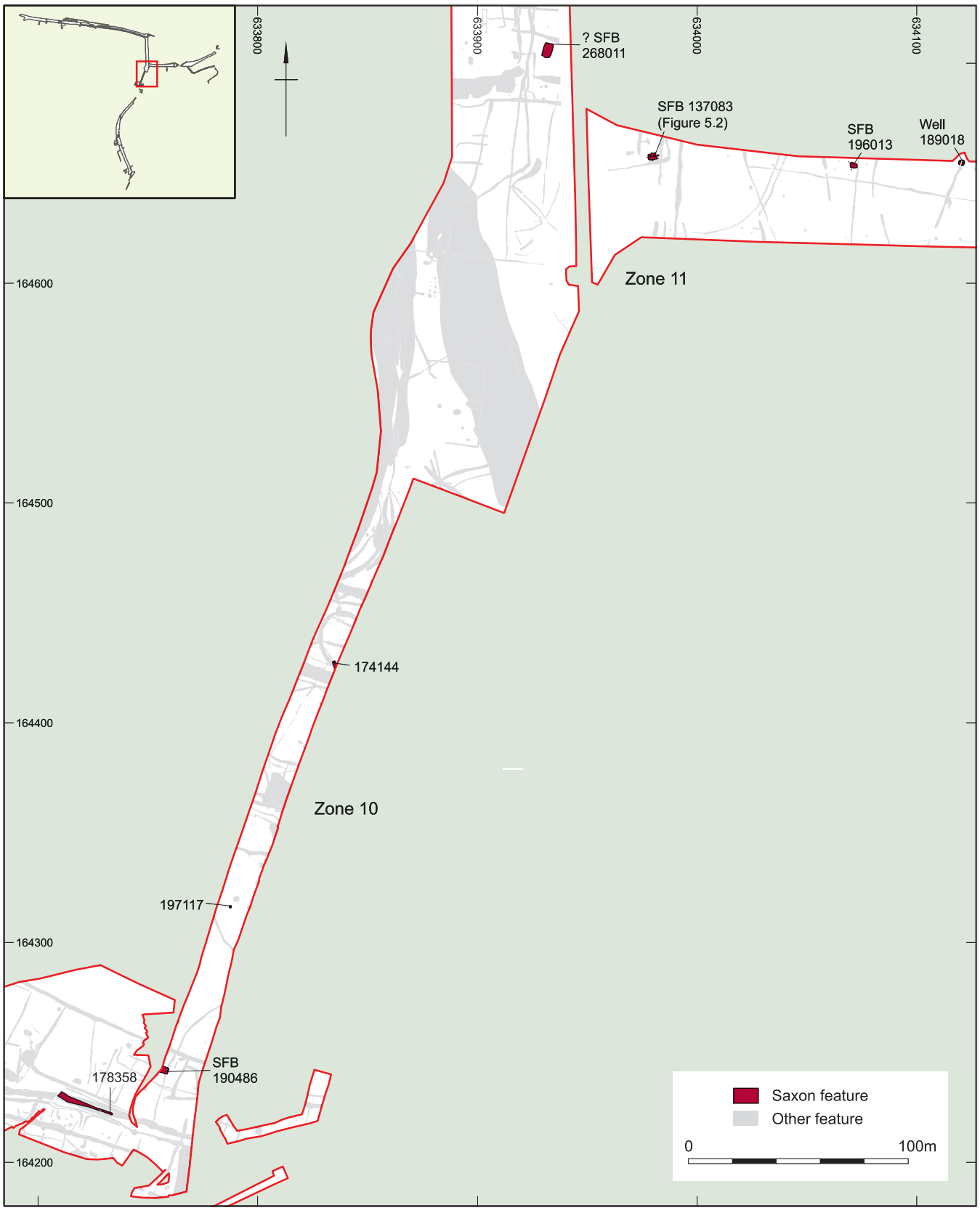


Fig 5.1 Plan of Anglo-Saxon features in Zones 10–11

Environmental samples contained vetch seeds, barley and wheat grains and fragments of hazelnut shells.

Zone 19

Activity in the early–mid-Saxon period was primarily evidenced by hollow-way 126227, and two cemeteries, one to the north (126228) and one to the south (195119) (Fig 5.3). Hollow-way 126227 extended from the northern edge of excavation in Zone 19 on an ENE–WNW alignment and then turned to the west, continuing along the entire length of Zone 19a before turning to the south-west and extending beyond the

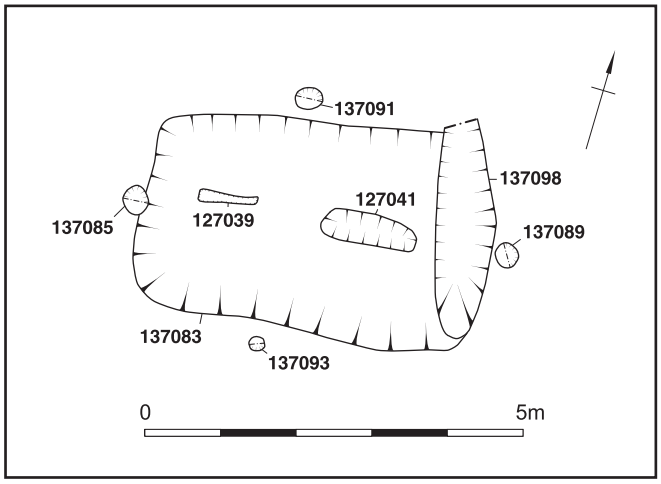


Fig 5.2 Plan of early Saxon sunken-featured building 137083 (Zone 11)

limit of excavation in Zone 20a (Pl 5.2). In doing this, it followed a course in excess of 450m long just below the crest of the Chalk ridge in this area. It broadly corresponded with the line of a Roman boundary ditch, 126172/151055, which ran to the south and perhaps defined the southern edge of an earlier, Roman trackway. The east end of hollow-way 126227 was on the same approximate alignment as the Roman trackways in Zone 19, suggesting that this route through the landscape, perhaps extending to Minster to the south-west, continued in use possibly from the Late Iron Age through to the Anglo-Saxon period and probably later.

The two cemeteries were located close to either side of hollow-way 126227, which further suggests that it was an important route in the Anglo-Saxon period. The width of the hollow-way varied between 3.5m and 7m along its length, the depth rarely exceeding 0.3m, and it followed a slightly meandering course. Over parts of the gently undulating base were the remains of gravel metalling, a maximum of 0.1m thick, overlain by a generally homogeneous dark fill. Only a small amount of pottery was recovered from the fill, most of it residual Roman material, but the latest was dated to AD 1050–1150, probably representing continued later use of the hollow-way.

All of the available parts of both cemeteries were investigated; though neither was fully exposed within the excavation area. They lay close together on the southern edge of the Chalk ridge with extensive views to the south across the Wantsum Channel and beyond. Both cemeteries contained only inhumation burials, and no Anglo-Saxon cremation burials or broken urns have been identified. Because both cemeteries extended beyond the limits of excavation, it is not clear what proportions of each cemetery have been revealed and investigated.

There were four empty or robbed graves with no surviving human remains, two in the northern cemetery and two in the southern cemetery. Some may have been cenotaphs. Alternatively, the removal of complete bodies could have taken place, perhaps indicating exhumation for reburial elsewhere. However, there is no evidence that any changes in local soil conditions resulting from disturbance to the graves had resulted in human bone

Pl 5.2 Anglo-Saxon trackway 126227 (Zone 19; view from east)

not surviving, though it appears to have affected its condition in graves where bone remained (see below).

Northern Cemetery 126228

Along the northern side of Zone 19 was a fairly dispersed group of 27 inhumation graves, containing a maximum of 30 individuals (Fig 5.4). Most of the graves contained a single individual, but one held two individuals (266018), and another (136111) three (Pl 5.3), in both cases side by side. These burials were in addition to the three recorded during the earlier excavations (Perkins 1985). The graves were all aligned approximately west–east, broadly parallel to hollow-way 126227. There were no instances of intercutting graves and this might suggest that they were marked in some way, or otherwise visible. In all cases where it could be determined, the bodies were laid in an extended supine position with their heads to the west. Two graves without human remains (252037 and 252053) have been noted above.

Grave goods were present with the majority of burials and include items of jewellery and dress fittings, such as glass beads, strap ends and buckles, along with iron knives, spindle whorls and occasional pottery vessels (including at least one Frankish bottle – Fig 5.15). There was also a seax (Fig 5.17), a strike-a-light (Fig 5.10), a work box or reliquary (Fig 5.9), what may have been a threadpicker (with a cruciform head, Fig 5.14 see Pl 5.19 and a single sceat (see Pl 5.17). A small long brooch of 5th- or 6th-century date (Fig 5.9) seems certain to represent an heirloom as it came from a grave that contained much later objects including a late 7th-century work box. Overall, the data suggest a late 6th- to 7th-century date for the cemetery, though all of the

Fig 5.3 Plan showing early Saxon cemeteries and trackway in Zones 19 and 20

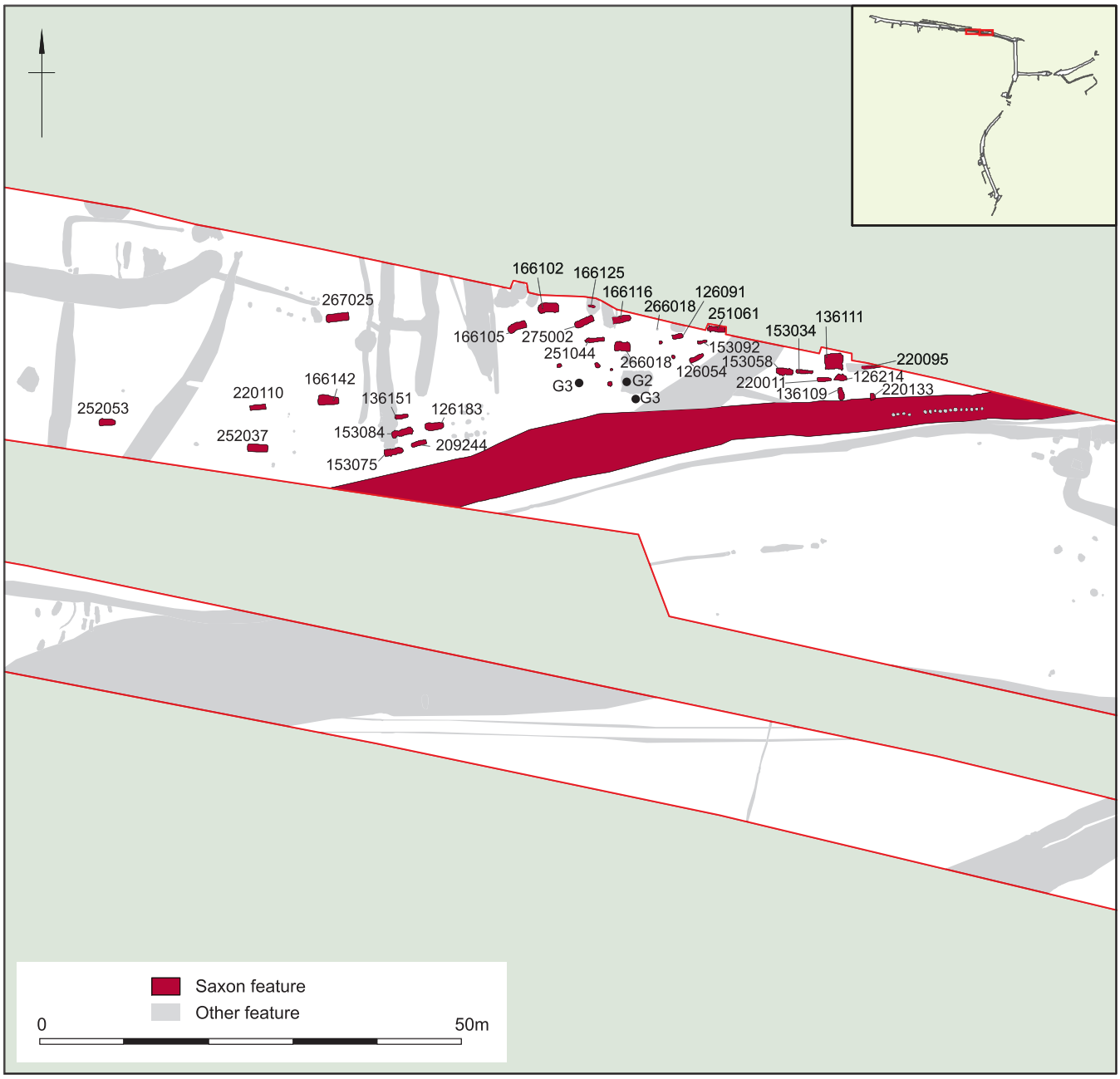


Fig 5.4 Plan of early Saxon cemetery 126228 (Zone 19)

objects could have been deposited in the 7th century, and there are a few indicators that some burials may date to the early 8th.

Two other graves, 136109 and 220133, may belong to this group, the former aligned north–south and the latter a shallow, sub-circular grave, both on the northern edge of Anglo-Saxon hollow-way 126227 (Fig 5.4), though whether the graves cut the hollow-way could not be established. Grave 136109 contained Middle to Late Iron Age pottery, possibly redeposited, and the location of these graves on the southern edge of the northern cemetery suggests that an early–mid-Saxon date is more likely. Nevertheless, it can be noted that 136109 was on a differing alignment to the Anglo-Saxon graves in this cemetery and 220133 was of different shape. No prehistoric burials were found in the immediate vicinity, but Middle Iron Age pit burial 209243 lay 45m to the north-west (see Chap 3).

One other group of inhumation burials can be mentioned here, these comprising part of the small 'eastern' Roman cemetery in Zone 19 (see above, Fig 4.51), 100m west of Anglo-Saxon northern cemetery 126228. Graves 126204, 126223 and 220136 all cut the surviving metallings of Roman trackway 196227 (Fig 4.52), and were initially assigned to the Anglo-Saxon period (and are included as such in the human bone tables in Vol 2, Egging Dinwiddy, Chap 13). The only grave good, from 126204, was part of an iron disc, later identified as a possible 'traveller' and, therefore, of Roman date (see Vol 2, Scott, Chap 3). On this basis the group of three inhumation burials, two aligned north–south and one east–west, were re-assigned to the (early) Roman period, but the possibility remains that they are Anglo-Saxon, the 'traveller' perhaps an heirloom, though the two cremation burials in the group are certainly Roman.

Pl 5.3 Triple burial in grave 136111 (Zone 19; view from east)

Grave catalogue
Note that not all objects listed in the grave catalogues are illustrated, and that not all were located on the original grave plans.
Sex is based on bone identification by Kirsten Egging Dinwiddy (see Vol 2 for full details), and not on gender-related objects.

Grave 126054 (Burial 126055)
Fig 5.5
Grave: ENE–WSW, sub-rectangular with shallow straight sides and a broadly flat but slightly irregular base – 1.93 x 0.63m, 0.13m deep (base at 47.99m OD). Fill of dark brown clayey silt, occasional flint inclusions.
Human Remains: Burial is supine and extended, west-south-west end of grave disturbed by plough damage. *c* 65% skeletal recovery. Adult *c* 18–23 yr. Female.

Grave 126091 (Burial 126092)
Fig 5.6
Grave: ENE–WSW, sub-rectangular with shallow concave sides, broadly flat but irregular base – 1.23 x 0.60m, 0.14m deep (base at 48.17m OD). Fill of mid- brown clayey silt loam.
Human Remains: Burial is supine and extended, head is against WSW end of grave. *c* 55% skeletal recovery. Juvenile *c* 9–10 yr.
Grave Goods:
ON 1224 Unidentified, Cu alloy, small domed object, solid, circular in section with small perforation through centre.
ONs 1241–2, 1245, 4666, Bead, glass, pale green.
ON 1243 Bead, glass, red.
ON 1244 Bead, glass, green.
Amber bead, fragmentary.
3 x nail shank fragments. Fe.

Grave 126183 (Burial 126184)
Not illus
Grave: E–W, sub-rectangular with moderate concave sides, irregular base – 2.38 x 0.90m, 0.17m deep (base at 47.63m OD). Fill of mid- brown clayey silt. Disturbed by modern cable trench.

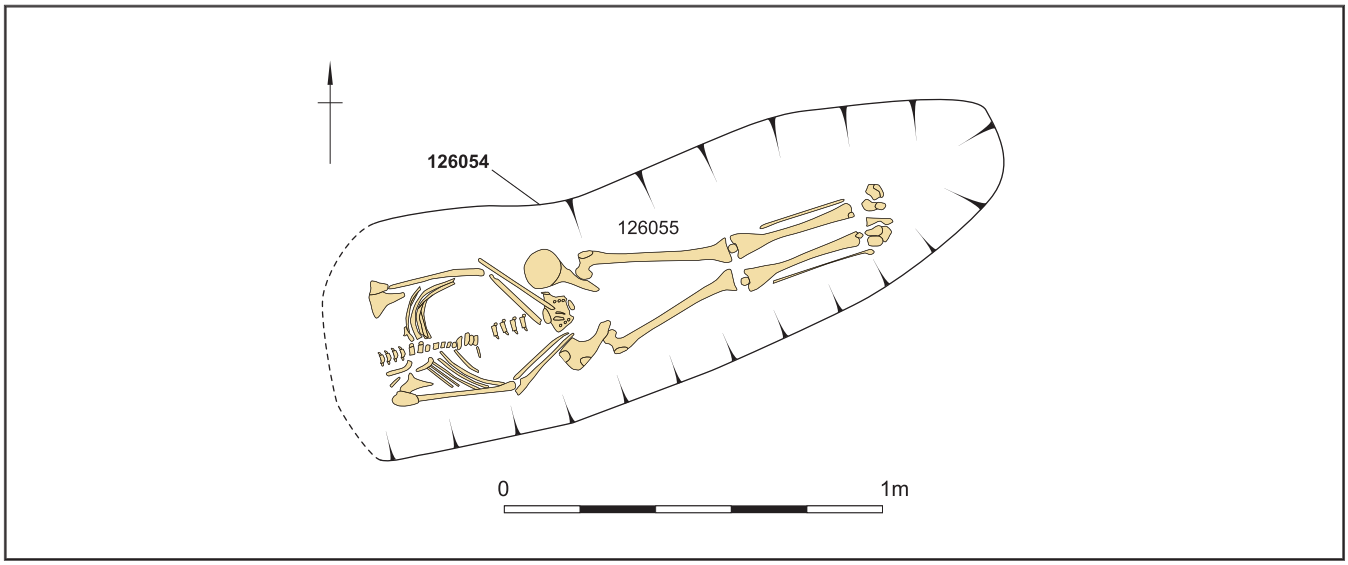


Fig 5.5 Plan of grave 126054(Zone 19)

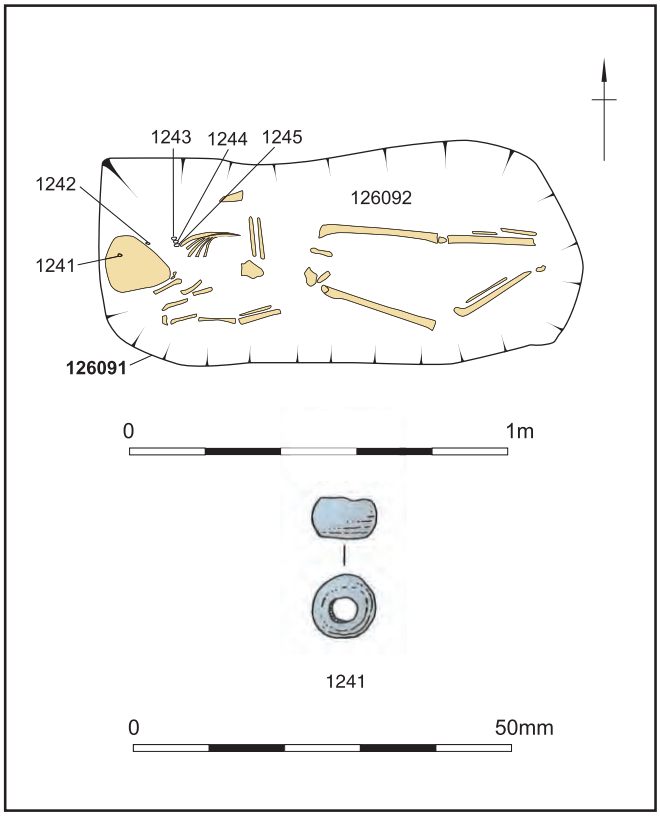


Fig 5.6 Plan of grave 126091 (Zone 19)

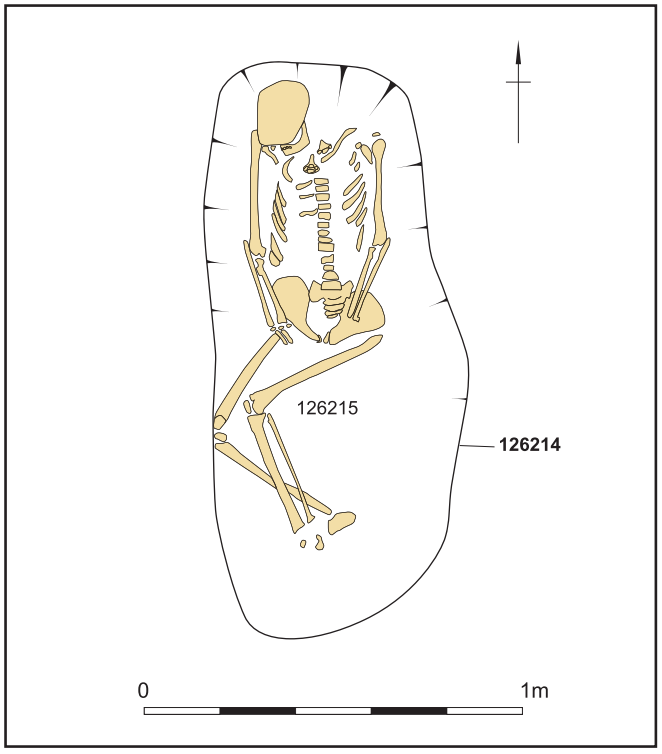


Fig 5.7 Plan of grave 126214 (Zone 19)

Human Remains: Burial is heavily disturbed, remaining bones redeposited. *c* 2% skeletal recovery. Subadult *c* 13–17 yr.
Grave Goods:?
ON 4631 Wire (L 84mm) with corroded lump at one end.

Grave 126214 (Burial 126215)
Fig 5.7; Pl 5.4
Grave: NNW–SSE, sub-rectangular cut with moderate straight sides, very shallow at south end, flat base, 1.53 x 0.80m, 0.18m deep (base at 47.35m OD). Fill of mid- brown silty clay loam with occasional chalk and flint inclusions.
Human Remains: Burial is supine with legs flexed to west. *c* 90% skeletal recovery. Adult *c* 35–45 yr. Female.

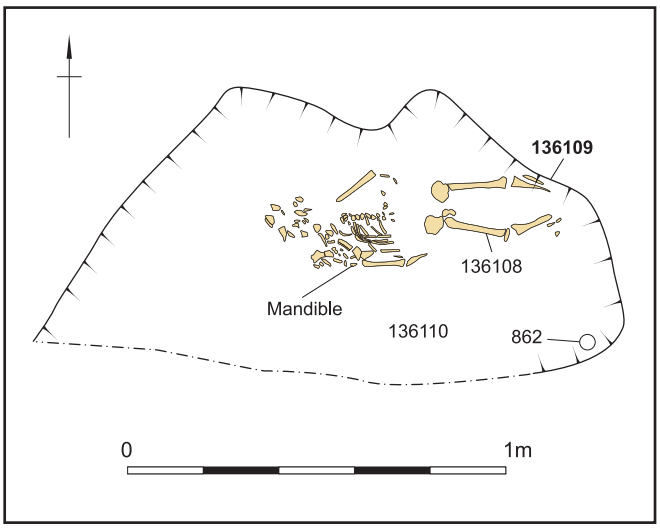


Fig 5.8 (right) Plan of grave 136109 (Zone 19)

Pl 5.4 Grave 126214 (Zone 19; view from west)

Grave 136109 (Burial 136108)
Fig 5.8
Grave: E–W, shape and profile of the cut was unclear, appeared very irregular and difficult to determine as it was cut into a spread of material – 1.56 x 0.74m, 0.22m deep. Fill of mid-yellowish brown sandy silt loam.
Human Remains: Burial is supine and extended. *c* 45% skeletal recovery. Infant *c* 1.5–2 yr.
Grave Goods:
ON 862 Bead – fat, circular amber bead/pendant with off-centre piercing.

Grave 136111 (Burial 136113, 136114, 136115)
Fig 5.9–5.10; Pl 5.3
Grave: E–W, sub-rectangular with moderate straight sides, flat base – 2.27 x 1.82m, 0.29m deep (base at 47.87m OD). Fill of mid- yellow brown sandy silt loam.
Triple burial and small amount of redeposited bone.
Human Remains: 136112 – redeposited longbone shaft and a few scraps; juvenile/subadult <16 yr.
136113 – Burial is supine and extended, probable gap *c* 0.15m between head and west end of grave, middle burial of three in same grave. *c* 85% skeletal recovery. Adult *c* 18–25 yr. Female.
136114 – Burial is supine and extended, probable gap *c* 0.15m between head and west end of grave, northernmost burial of three in same grave. *c* 45% skeletal recovery. Subadult *c* 14–16 yr. ?Male.
136115 – Burial is supine and extended, right arm slightly flexed, probable gap *c* 0.15m between head and west end of grave, southernmost burial of three in the same grave. *c* 35% skeletal recovery. Juvenile *c* 10–12 yr.
Grave Goods:
ON 1232 Nail, Fe, large hobnail head.
ON 1233 Large bolt, Fe, with domed head and circular section shank. Near right foot of burial 136113.
ON 2016 Bead, glass, dark blue. Near left arm of burial 136115.
ON 2017 Coin, Ag sceat – Series B, late 7th century AD. Between burials 136113 and 136115 (Pl 5.17).
ON 2018 Brooch, Cu alloy. Small long brooch, with trapezoid head decorated with quincunx of ring-and-dot motifs. The bottom end of the brooch terminates in a fan-shape and is decorated with further ring-and-dot. The hinged pin is lost. Near right foot of burial 136114.
ON 2019 Buckle or hinge plate, Cu alloy, tongue-shaped with bevelled edges and 3 dome-headed rivets. The outer rivet has a shank 9mm long, the inner pair of rivets have shanks *c* 7mm long. The lengths of the rivet shanks suggest that the hinge was attached to a board, rather than to a belt. Near left leg of burial 136113.
ON 2019bis Poorly preserved fragment of Fe strip (W: 20mm), with Cu alloy split pin, and Fe link or ring fragment.
ON 2020 Decorative plate, Cu Alloy. Cast rectangular plate with interlaced ribbon decoration. It has a plain stepped edge and is slightly curved through its length. There is no visible means by which it could have been attached. Near left leg of burial 136113.
ON 2021 Tacks, Cu alloy, 2 small tacks with clenched chisel tips and small heads. Probably from a box.
ON 2022 Rod/shank, Fe, 3 fragments, probable nail shank. Near left foot of burial 136113.
ON 2027 Fire steel or strike-a-light, Fe, formed from thin plate, with curled terminals. Near pelvis of burial 136113.
ON 2028 Knife, Fe, whittle tang knife blade with curved back and almost straight edge. Also upper part of chatelaine. Near left side of torso of burial 136113.
ON 2029 Comb, Fe and bone, 5 Fe fragments and fragments from a bone comb. Near right foot of burial 136113.
ON 2029bis Socketed spearhed, Fe. The blade is rectangular in section (ie, no sharp edges) and the tip is bent. Also strip with possible tang and fused fragment attached to tang. Fe.
ON 2045 Head of clench bolt, Fe, as ON 2046–2050. Between burials 136113 and 136114.
ON 2046 Bolt, Fe, clench bolt with domed circular head and lozenge-shaped rove. Mineral-preserved wood. Near pelvis of burial 136114.
ON 2047 Bolt, Fe, clench bolt, with domed circular head and lozenge-shaped rove. Between upper legs of burial 136114.
ON 2048 Bolt, Fe, clench bolt, with domed circular head and lozenge-shaped rove. Near left leg of burial 136114.
ON 2049 Bolt, Fe, clench bolt, with domed circular head and lozenge-shaped rove. Near right foot of burial 136114.
ON 2050 Bolt, Fe, clench bolt, with domed circular head and lozenge-shaped rove. Near right foot of burial 136114.

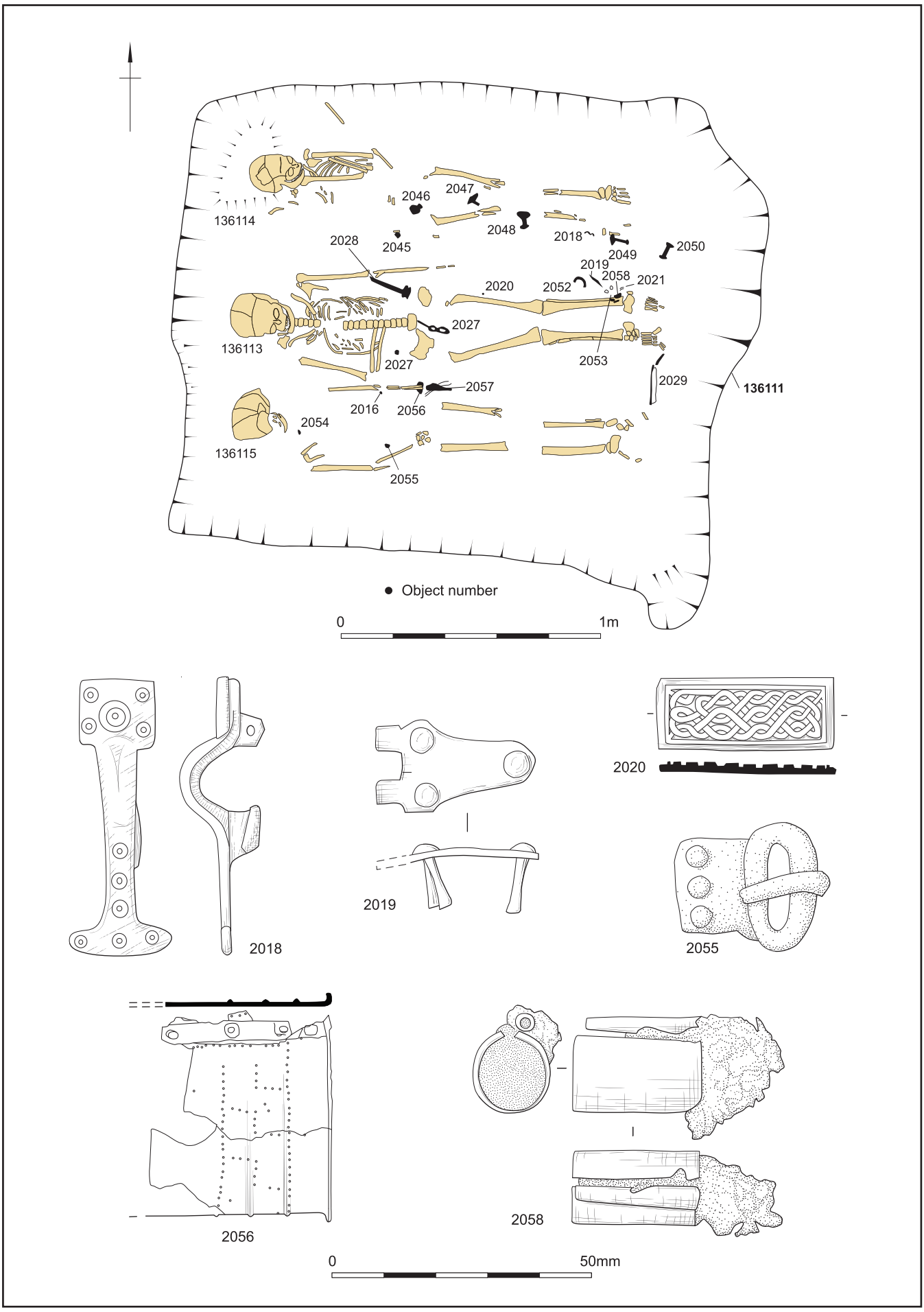


Fig 5.9 Plan of grave 136111 (Zone 19)

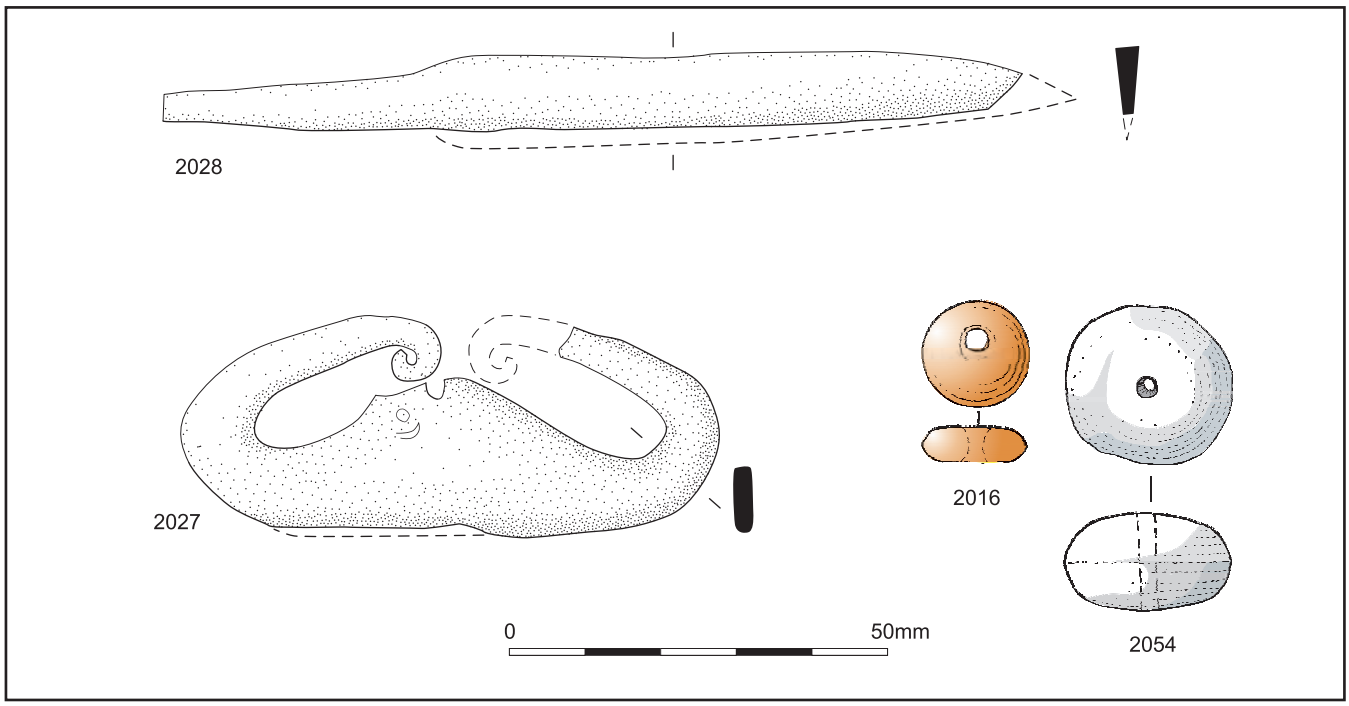


Fig 5.10 Grave 136111 – grave goods (Zone 19)

ON 2052 Shale, ovoid lump, ?bracelet fragment. Associated with burial 136113.
ON 2053 ?spool, animal bone. Near lower left leg of burial 136113.
ON 2054 Bead, rock crystal. Near right shoulder of burial 136115.
ON 2055 Buckle, Fe, with oval frame and small plain rectangular plate. The plate was secured to the belt by 3 rivets. Near right side of torso of burial 136115.
ON 2056 Work box or reliquary. Cylindrical container, Cu alloy. Four large fragments from cylindrical body of container decorated with parallel raised lines of punched dots. The container was lipped at one end. Two further joining fragments from a riveted seam, and one small fragment with a pin or rivet hole. Also 32 small curved sheet fragments. Container D: *c* 45mm; L extant: *c* 40mm. Also fragments of textile, leather and possibly antler. Near left arm of burial 136115.
ON 2057 (with elements from ON 2027 and ON 2028) Possible girdle or belt formed from wire links with rolled over looped ends. Fe. ON 2057: 3 wire fragments: (1) tapered fragment (L: 49mm); (2) fragment of wire with rolled over loop at one end (L: 39mm); (3) fragment of wire with broken loop at one end (L: 25mm); (4) curved fragment of wire (L: 21mm); ON 2027: 3 small fragments formed from wire of square section, 2 with twisted wire at one end. L: 20mm; 18mm; 17mm; ON 2028: 5 pieces of wire of square section fused in lump. L: 56mm. Compare grave 171168 below.
ON 2057 bis Lozenge-shaped rove fused with nail shanks or bar fragments, and length of tapered bar or rod. Fe. L: 49mm.
ON 2058 Object comprising wide tube formed from rolled sheet, with small tapering tube attached to one side. Cu alloy. Larger tube: L: 25mm; D: 15mm; smaller tapering tube: L: 23mm. Probably a cylindrical barrel lock.
ON 4670 Nail, Fe, fragment.

Grave 136150 (Burial 136151)
Fig 5.11
Grave: E–W, sub-rectangular with moderate to steep straight sides, flat base – 1.64 x 0.51m, 0.24m deep (base at 47.61m OD). Fill of mid-yellowish brown sandy silt with frequent chalk and flint inclusions.
Human Remains: Burial is supine and extended, right arm flexed, probable gap *c* 0.1m between head and west end of grave. *c* 90% skeletal recovery. Juvenile *c* 6.5–8 yr. ?Female.

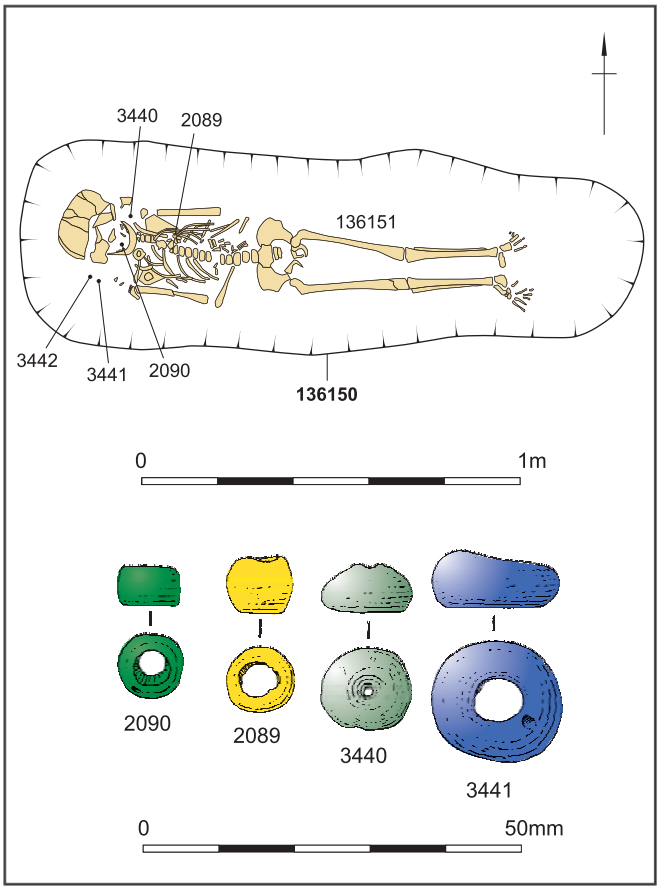


Fig 5.11 Plan of grave 136150 (Zone 19)

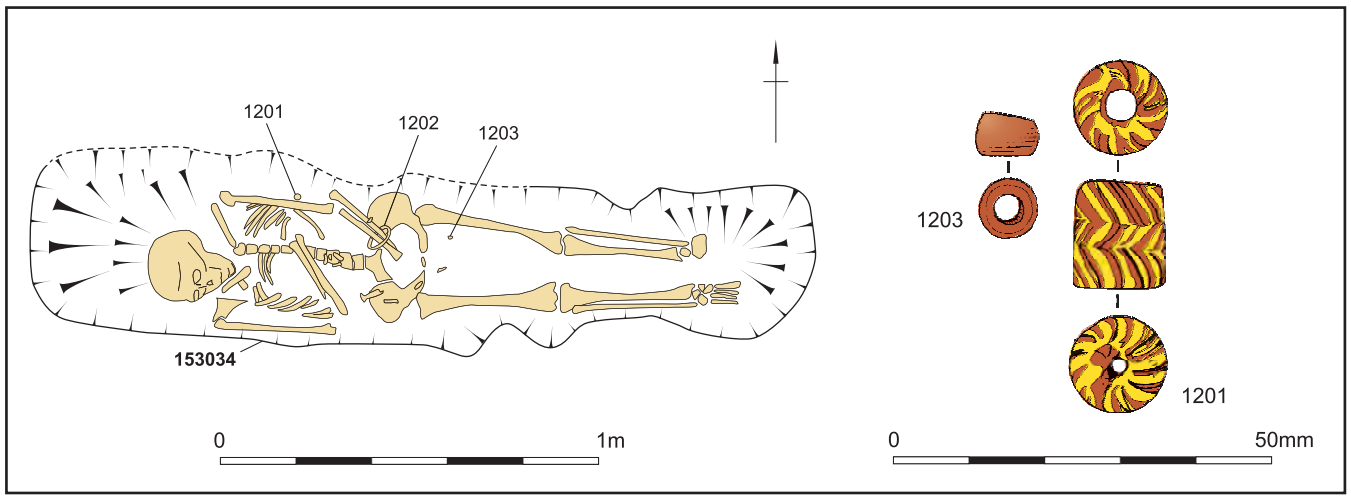


Fig 5.12 Plan of grave 153034 (Zone 19)

Grave Goods:
ON 2089 Bead, glass, yellow.
ON 2090 Bead, glass, green.
ON 3440 Bead, glass, orange.
ON 3441 Bead, glass, olive green.
ON 3442 Bead, glass, yellow.

Grave 153034 (Burial 153033)
Fig 5.12
Grave: ESE–WNW, sub-rectangular with steep straight sides, uneven base – 2.10 x 0.74m, 0.14m deep (base at 47.86m OD). Fill of brown clay loam with occasional flint inclusions.
Human Remains: Burial is supine and extended, probable gap *c* 0.1m between head and ESE end of grave. *c* 95% skeletal recovery. Adult *c* 40–45 yr. Female.
Grave Goods:
ON 1201 Bead, glass, dark red and yellow.
ON 1202 Bracelet, Cu alloy, with plain band of half round section.
ON 1203 Bead, glass, red.
ON 3633 Unidentified, Fe, disc-shaped object, round central perforation.
ON 4579 Nail shank fragment, Fe.

Grave 153058 (Burial 153057)
Fig 5.13
Grave: E–W, irregular sub-rectangular cut with moderate

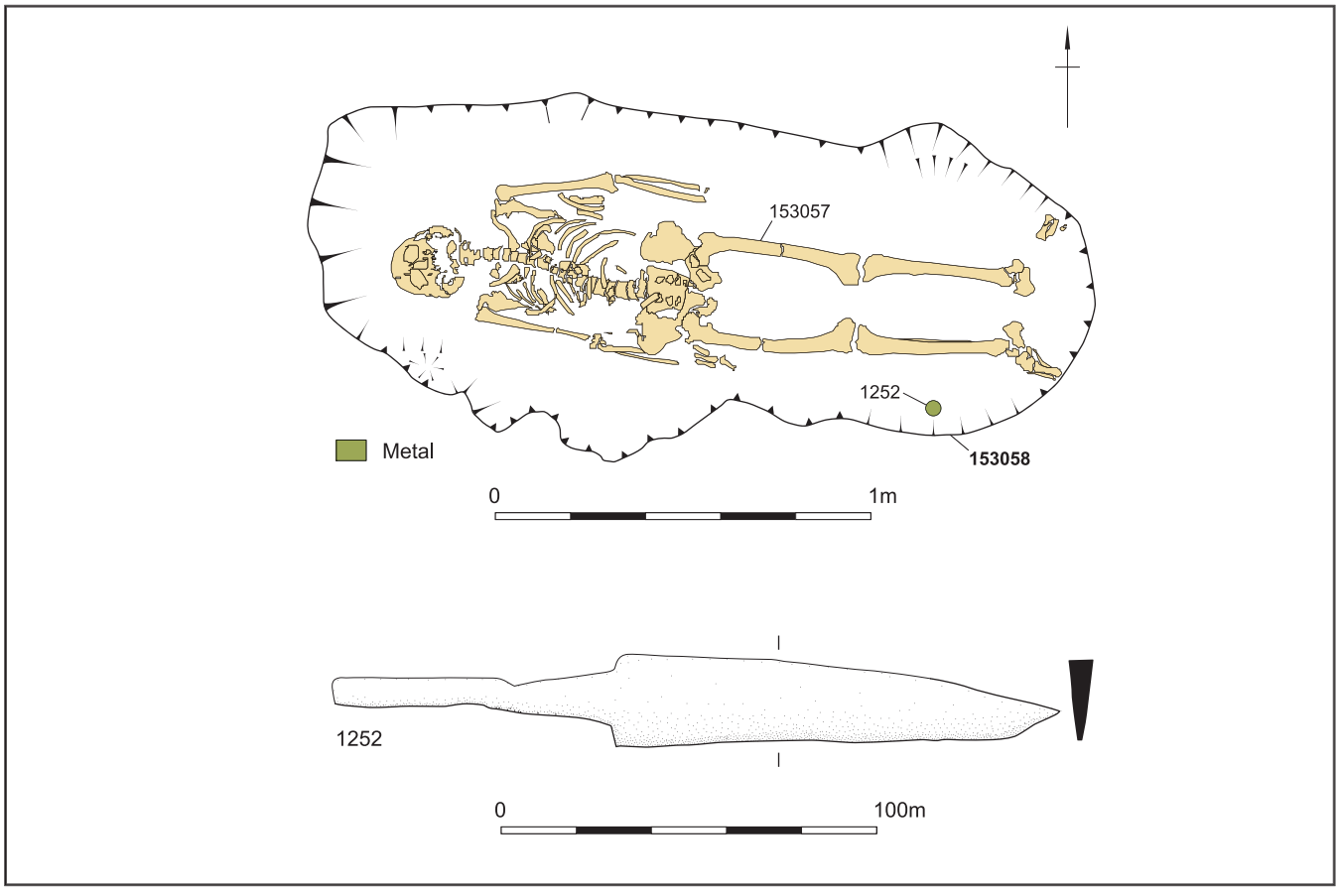


Fig 5.13 Plan of grave 153058 (Zone 19)

irregular sides, irregular base – 2.10 x 0.83m, 0.33m deep (base at 47.67m OD). Fill of dark brown sandy clay loam.
Human Remains: Burial is supine and extended, probable gap *c* 0.15m between head and west end of grave. *c* 95% skeletal recovery. Adult *c* 35–45 yr. Male.
Grave Goods:
ON 1252 Whittle tang knife, Fe, with blade of triangular section and curved back and curved edge.
ON 4016 Sheet, Fe, trapezoid plate with a possible nail hole.
2 hobnails; 2 nail shank fragments, 4 undiagnostic fragments. Fe. Sample No 5630.

Grave 153075 (Burial 153077)
Fig 5.14
Grave: ENE–WSW, irregular cut with moderate irregular sides, irregular base – 2.20 x 0.75m, 0.25m deep (base at 47.38m OD). Fill of dark brown clay loam with occasional chalk and flint inclusions.
Human Remains: Burial is supine and extended, probable gap 0.40m between head and ENE end of grave. *c* 60% skeletal recovery. Adult *c* 35–45 yr. Female.
Grave Goods:
ON 2064 Whittle tang knife, Fe, incomplete blade of triangular section, mineral-preserved wood fragments on surface.
ON 2066 Rivet and rove, Fe, found with object 2069.
ON 2067 Small pair of shears, Fe.
ON 2068 Threadpicker? Cu alloy. Comprises long tapering point, flat rectangular body and cruciform head (see Pl 5.19).
ON 2069 Rivet or nail, Fe, incomplete. Sub-square head and shank of circular section possible bolt or large nail fragment, found with object 2066.
ON 2070 Necklace rings, Cu alloy, formed from thin wire with twisted wire junction. One compete ring made up of 4 fragments, with 3 small fragments forming part of a second ring.
ON 2071 Bead, glass, red.
ON 2072 Bead, glass, blue.
ON 4682 Comb, fragment of bone comb with Fe rivet attached.

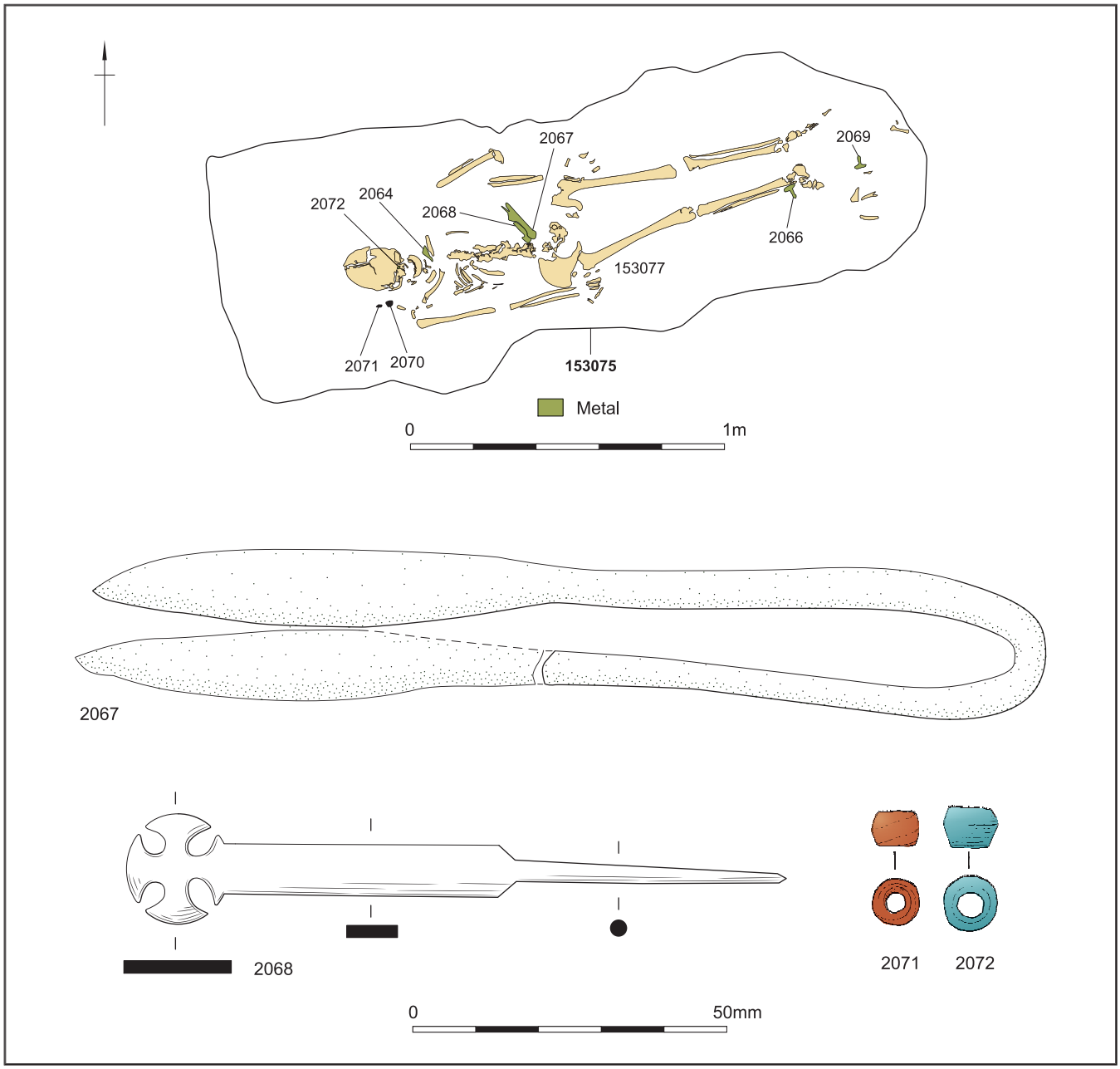


Fig 5.14 Plan of grave 153075 (Zone 19)

Grave 153084 (Burial 153086)
Fig 5.15
Grave: ENE–WSW, sub-rectangular/irregular cut with moderate irregular sides, irregular concave base – 2.37 x 0.80m, 0.23m deep (base at 47.47m OD). Fill of mid-grey brown silty clay loam with some chalk and flint inclusions.
Human Remains: Burial is supine and extended, probable gap *c* 0.35m between head and WSW end of grave. *c* 3% skeletal recovery. Adult >45 yr.
Grave Goods:
ON 2091 Bead, glass, yellow with a red hue.
ON 2092 Small pair of shears, Fe. Also possible knife blade fragment with triangular section blade.
ON 2095 Bead, glass, red.
ON 2096 Bead, glass, yellow with an orange/red hue.
ON 2097 Bead, glass, orange.
ON 2098 Bead, glass, green.
ON 3411 Bead, amethyst, oval cross-section.
ON 3438 Pot, North French (Pas-de-Calais) 'grey' sandy ware (EMS9). Merovingian import. Complete biconical jar, *c* 575–750
ON 3439 Small fragment of wire. Cu alloy.
ON 3444 Plate, Fe, possible coffin fitting or bracket.
ON 4636 Strip, Fe, strip fragment.

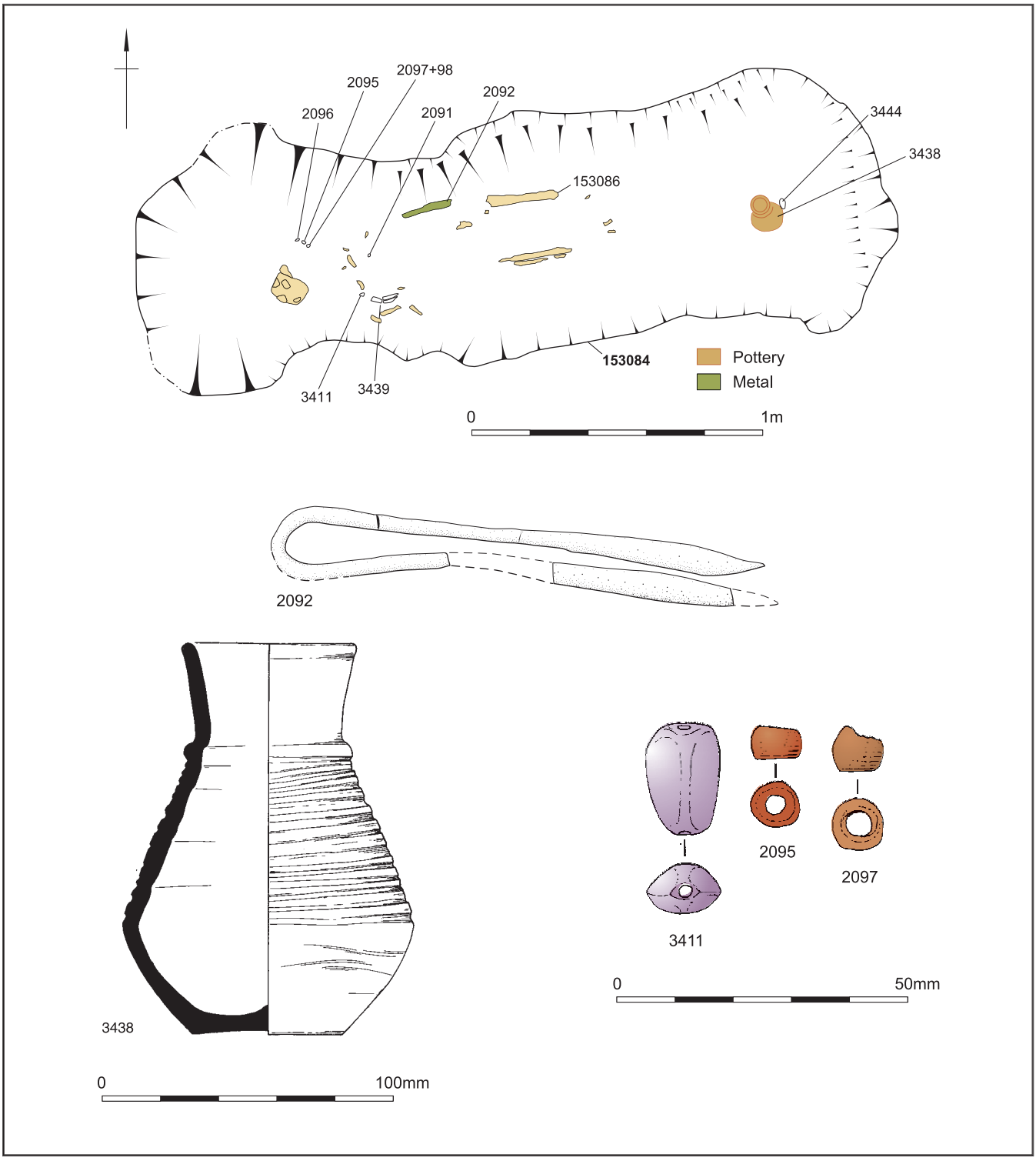


Fig 5.15 Plan of grave 153084 (Zone 19)

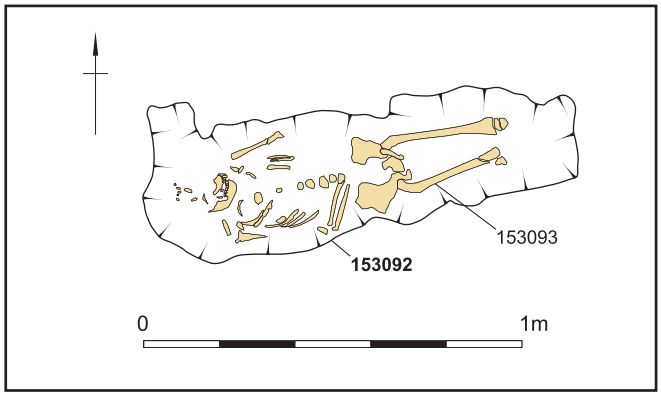


Fig 5.16 Plan of grave 153092 (Zone 19)

ON 4694 Knife, Fe, whittle tang knife fragment. Knife with dropped edge and angled choil. Triangular section blade. Traces of possible bolster.

Grave 153092 (Burial 153093)
Fig 5.16
Grave: ENE–WSW, sub-rectangular/irregular cut with shallow irregular sides, irregular base – 1.16 x 0.40m, 0.13m deep (base at 48.05m OD). Fill of dark brown sandy clay loam with occasional chalk and flint inclusions.
Human Remains: Burial is supine and extended, head against WSW end of grave. *c* 35% skeletal recovery. Juvenile *c* 7–9 yr.

Grave 166102 (Burial 166103)
Fig 5.17
Grave: E–W, sub-rectangular/irregular cut with steep straight sides, flat base – 2.50 x 1.15m, 0.57m deep (base at 47.94m OD). Fill of mid-brown silt with chalk inclusions.
Human Remains: Burial is supine and extended, probable gap *c* 0.3m between head and west end of grave. *c* 30% skeletal recovery. Adult *c* 30–40 yr. Male.
Grave Goods:
ON 1289 Nail, Fe.
ON 1291 Seax, Fe. The long triangular section blade is not piled. Tang has traced of preserved organic handle.
ON 1295 Knife, Fe, whittle tang knife with incomplete blade with slightly curved back.
ON 1296 Oval or D-shaped buckle frame attached to slightly tapered plate, Fe. The plate has inlaid decoration adjacent to the buckle frame. Mineral-preserved textile/leather. Also 2 fragments of possible parallel-sided Fe strip each with rounded end and single nail or rivet hole, and 2 thin plate or sheet fragments, undiagnostic, and a nail fragment.
ON 1297 Unidentified, Cu alloy, sheet fragment tapered with cut-out and 2 pin-holes. Function unclear.
ON 1298 and 1299 Nail fragment, Fe, mineral-preserved wood.
ON 2000 Nail fragment, Fe.
ON 2001 Tiny oval buckle frame, Cu alloy, attached to a fragment of plate formed from strip. Perhaps from small purse, bag or clothing item.
ON 2002 Nail, Fe, small nail shank fragment.
ON 2003 Fe, Unidentified lump.
ON 2004 Rod, Fe, 2 Fe bars crossed and fused together with a possible organic layer. 2 small Cu alloy fragments, possibly pins, also present.
ON 2005 Bar, Fe, of square section with flattened splayed end. Also Fe junction plate or link with 2 rivets, poorly preserved
ON 2006 Small strap end with split top with 1 rivet or pin. Cu alloy.
ON 2007 Fe, Unidentified lump with mineral-preserved wood.
ON 2008 Lock or bolt plate, Fe, incomplete. 2 clear nail or pin-holes. Also Fe strip or plate fragment, comprising two parallel strips welded together
ON 2010 Knife, Fe, whittle tang blade, encrusted. Straight parallel-sided blade with square end with rounded corners. Some mineral-preserved organics, perhaps from scabbard.
ON 4445 Nail, Fe, 6 nail fragments.

Grave 166105 (Burial 166106)
Fig 5.18
Grave: ENE–WSW, sub-rectangular with moderate irregular sides, flat base – 2.32 x 0.85m, 0.47m deep (base at 45.26m OD). Fill of mid-brown silt, chalk inclusions.
Human Remains: Burial is supine and extended. *c* 40% skeletal recovery. Adult *c* 35–45 yr. Female.
Grave Goods:
ON 2034 Knife, Fe, fragment, could possibly be part of ON 2035 joins ON 2037, possible knife blade.
ON 2035 Knife, Fe, Whittle tang knife, blade with straight back. Little of blade survives. Mineral-preserved organics on the tang. probable tang and part of blade, 2 fragments.
ON 2036 Rod, Fe, length of rod, encrusted.
ON 2037 Length of rod, slightly tapered and widening at one end Knife, Fe, joins ON 2034, possible knife blade.
ON 2038 Bar, Fe, length of bar bent to form a right angle.
ON 2039 Bead, glass, green.
ON 2040 Pot, North French Black ware (EMS8). Merovingian import. Sub-biconical jar. Wheel-thrown, *c* 630–670/700.
ON 2041 Beads (2), glass, green.
ON 2042 Bead, glass, pale blue green.
ON 2043 Spindle whorl, fired clay, both upper and lower surfaces incised with concentric grooves.
ON 2044 Bead, glass, red.
ON 4446 Wire, Cu alloy, thin curved fragment, possibly from a necklace ring.

Grave 166116 (Burial 166117)
Fig 5.19
Grave: ENE–WSW, sub-rectangular with steep straight sides, flat base - 2.20 x 0.92m, 0.35m deep (base at 48.08m OD). Fill of mid- brown silt with frequent chalk inclusions
Human Remains: Burial is supine and extended but disturbed. *c* 98% skeletal recovery. Adult *c* 30–35 yr. Female.
Grave Goods:
ON 2060 Small nail or rivet, Fe, with circular flat-topped head, incomplete.
ON 2061 Bead, glass, green.
ON 2062 Bead, amber.
ON 2063 Bead, glass, red.

Grave 166125 (Burial 166126)
Fig 5.20
Grave: E–W, oval – 0.92 x 0.36m, 0.07m deep. Fill of dark brown silty clay loam.
Human Remains: Burial is supine and extended, probable gap *c* 0.2m between head and west end of grave. *c* 75% skeletal recovery. Infant *c* 1–2 yr.
Grave Goods:
ON 2076 Bead, glass, green.
ON 2077 Bead, glass, dark blue.
ON 2078 Bead, amber.
ON 4668 Bead, glass, greenish blue.
- Bead, amber.

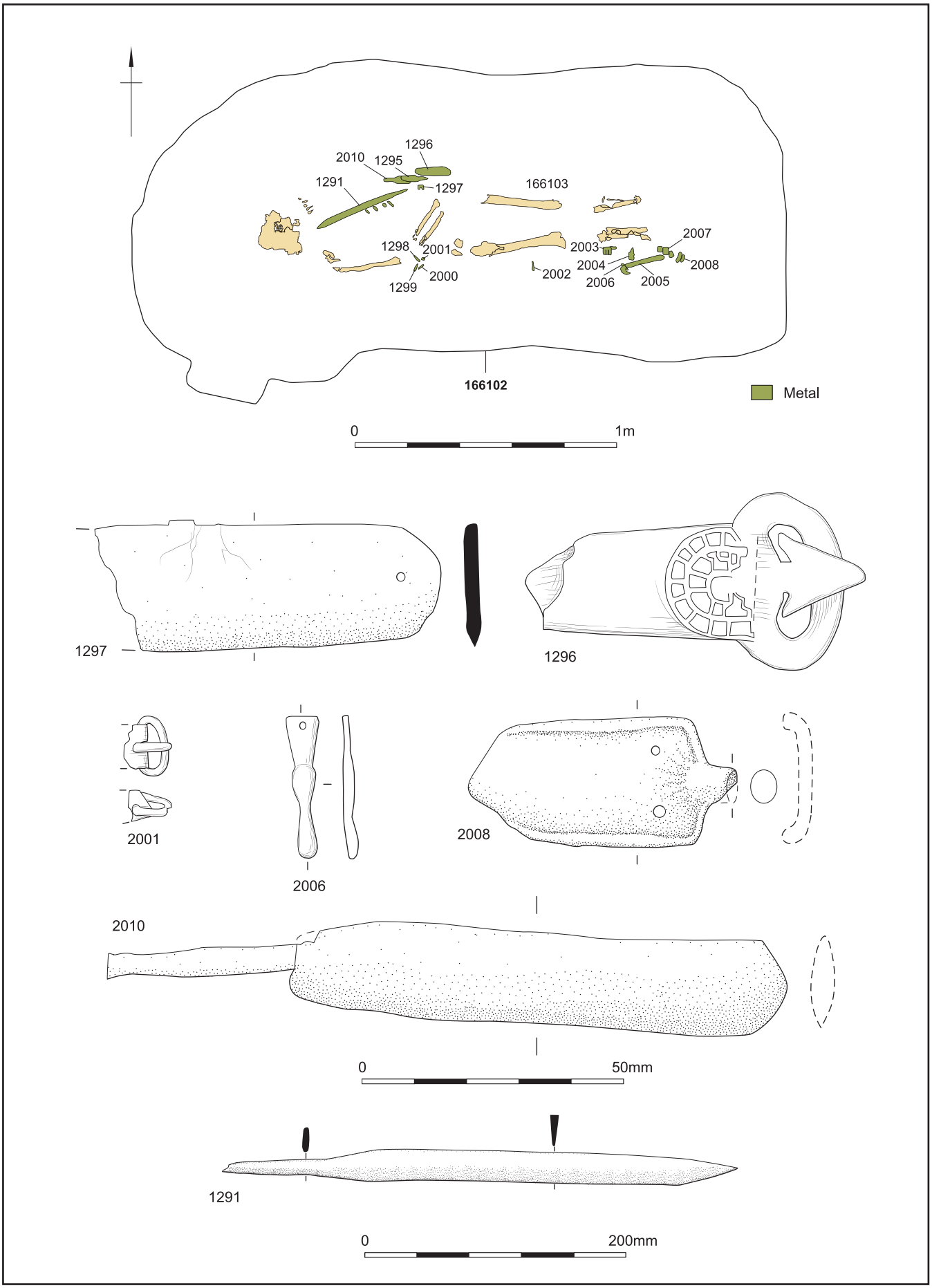
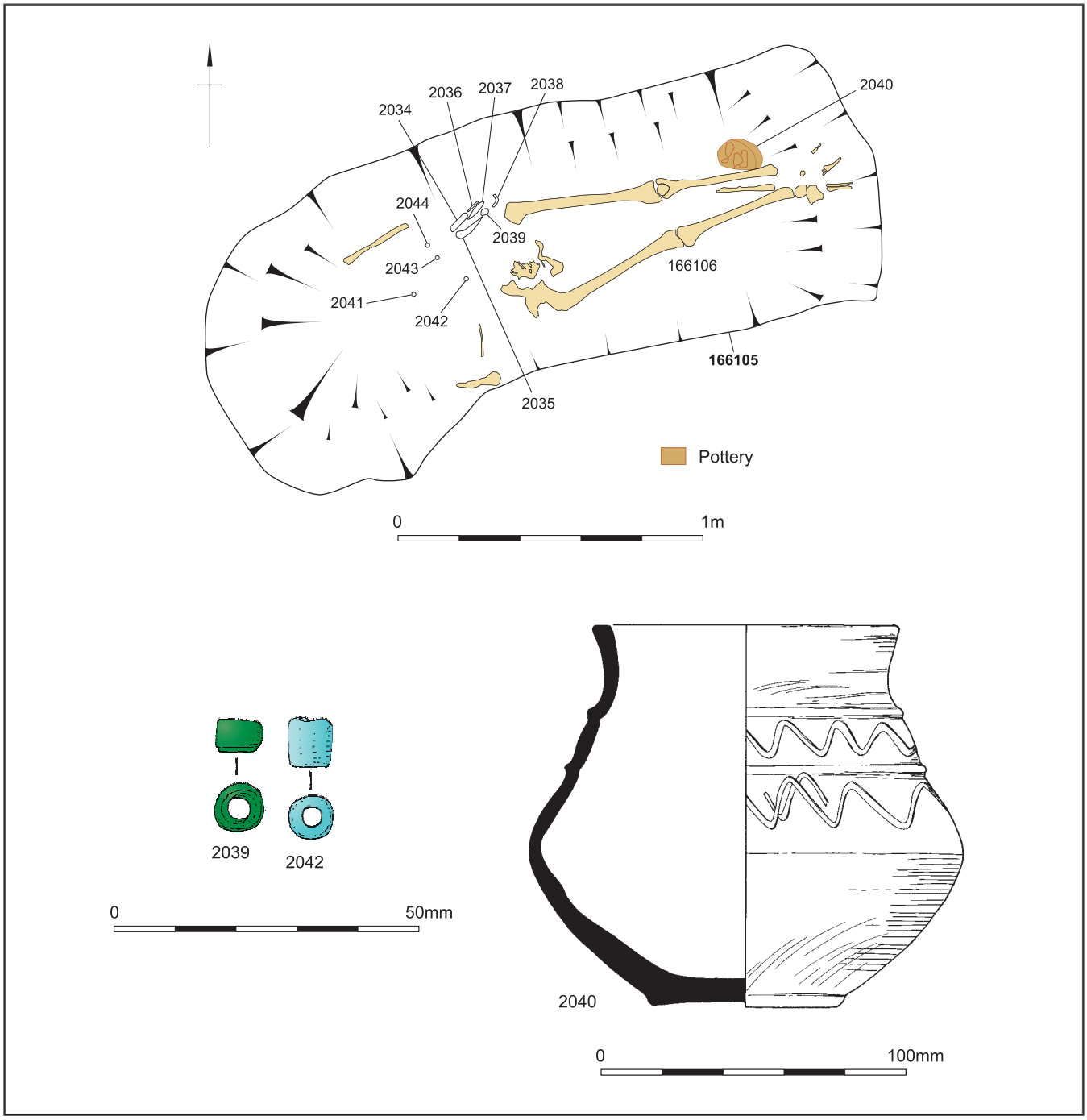
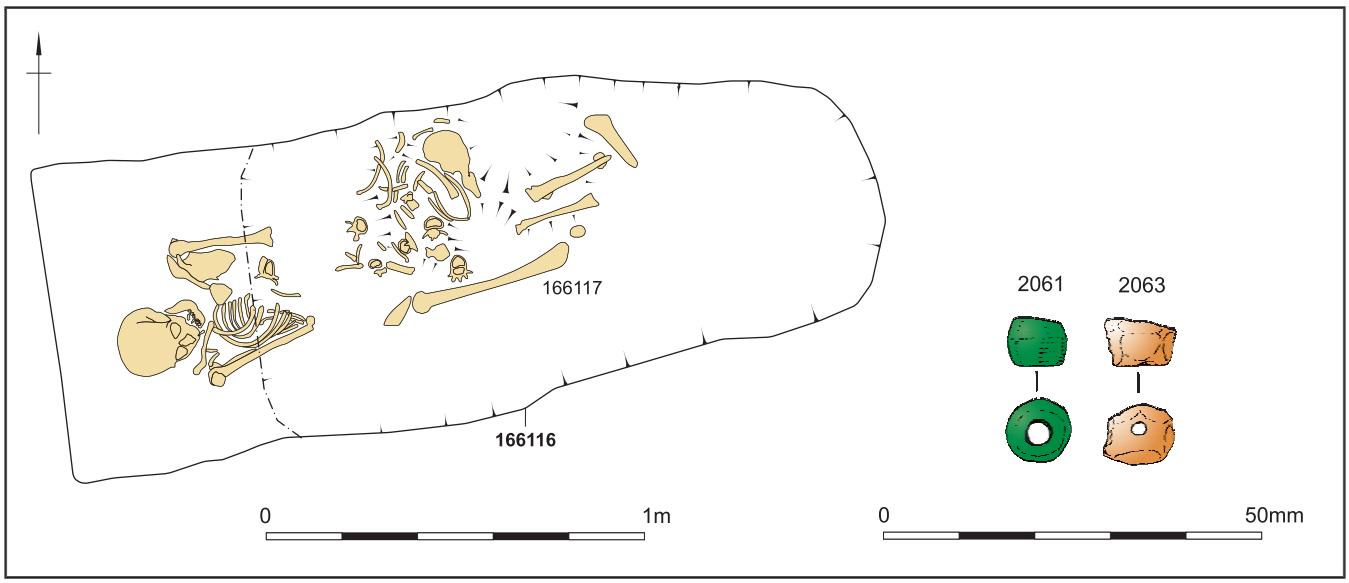


Fig 5.17 (above) Plan of grave 166102 (Zone 19)

Fig 5.18 (opposite, above) Plan of grave 166105 (Zone 19)

Fig 5.19 (opposite, below) Plan of grave 166116 (Zone 19)


2034
2036
2037
2038
2040
2044
2039
2043
166106
2041
2042
166105
2035
Pottery
0
1m
2039
2042
0
50mm
2040
0
100mm


166117
166116
0
1m
2061
2063
0
50mm

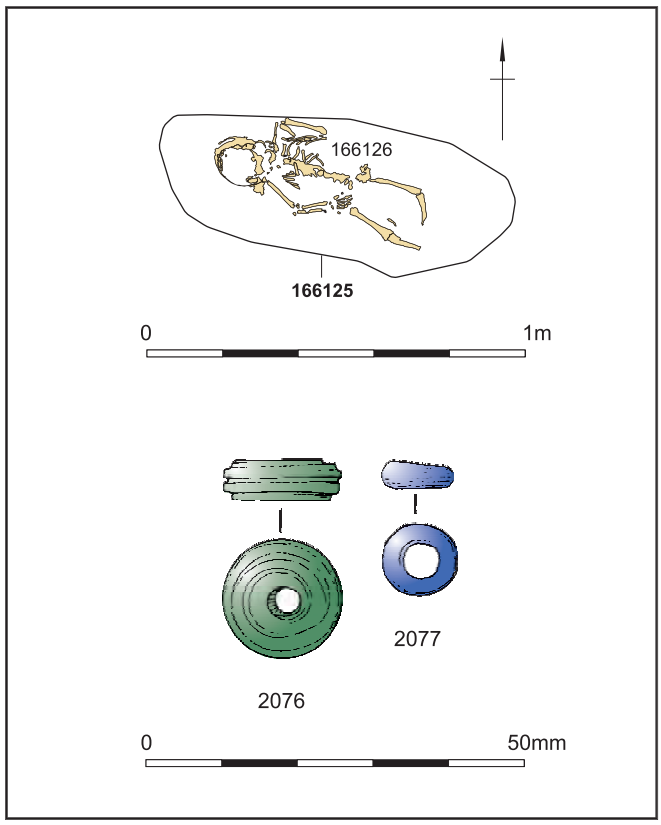


Fig 5.20 Plan of grave 166125 (Zone 19)

Grave 166141 (Burial 166142)
Fig 5.21
Grave: E–W, sub-rectangular with steep irregular sides, flat base – 2.55 x 1.25m, 0.75m deep (base at 47.25m OD). Fill of mid-grey brown silty loam with frequent chalk and some flint inclusions.
Human Remains: Disturbed/redeposited burial. *c* 8% skeletal recovery. Adult *c* 20–35 yr.
ON 3423 Small strap end, Cu alloy, with split top and possibly with 2 rivets or pins.
ON 3424 Unidentified, Cu alloy, small object made from thin sheet or plate. Fragment of circular plate with 2 parallel lugs extending from one edge.
ON 3429 Small strap end, Cu alloy, with split top and 2 rivets or pins.

Grave 209243 (Burial 209244)
Fig 5.22
Grave: ENE–WSW, sub-rectangular with steep concave sides, flat base – 1.85 x 0.58m, 0.28m deep (base at 47.33m OD). Fill of mid-brown clayey silt with frequent chalk and some flint inclusions.
Human Remains: Burial is supine and extended, probable gap *c* 0.25m between head and WSW end of grave. *c* 98% skeletal recovery. Adult 40–50 yr. Male.
Grave Goods:
ON 3485–3495; 3600; 3602–3605 Clench bolt, Fe, rivet or clench bolt with lozenge-shaped rove.
ON 3497/8 Buckle, Fe, oval buckle frame with plain buckle plate secured by 3 pins or rivets.
ON 3499 Sheet, Cu alloy and Fe, fragments of iron and Cu alloy plates riveted together, uncertain function.
ON 3601 Clench bolt, Fe, ?clench bolt.
ON 3607 Clench bolt, Fe, part of rivet or clench bolt, with mineral-preserved wood.
ON 3609 Knife, Fe, whittle tang knife with straight back and parallel edge, broken at tip. Triangular section blade. Also 18 small to medium Fe plate fragments, some appear to be laminations.
ON 4632 Strip, Fe, small thin strip fragment.

Grave 220011 (Burial 220012)
Fig 5.23
Grave: E–W, sub-rectangular/irregular cut with moderate concave sides, irregular base – 1.72 x 0.50m, 0.07m deep (base at 47.83m OD). Fill of mid-brown clayey silt.

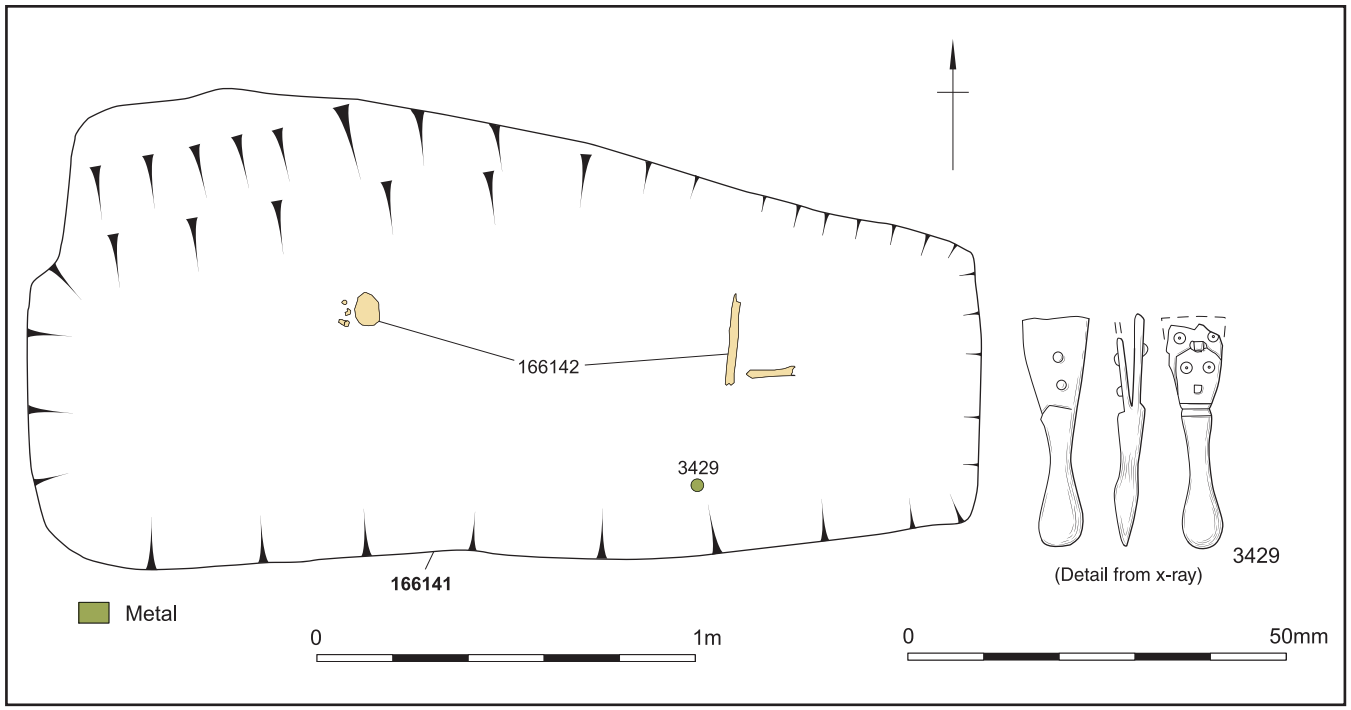
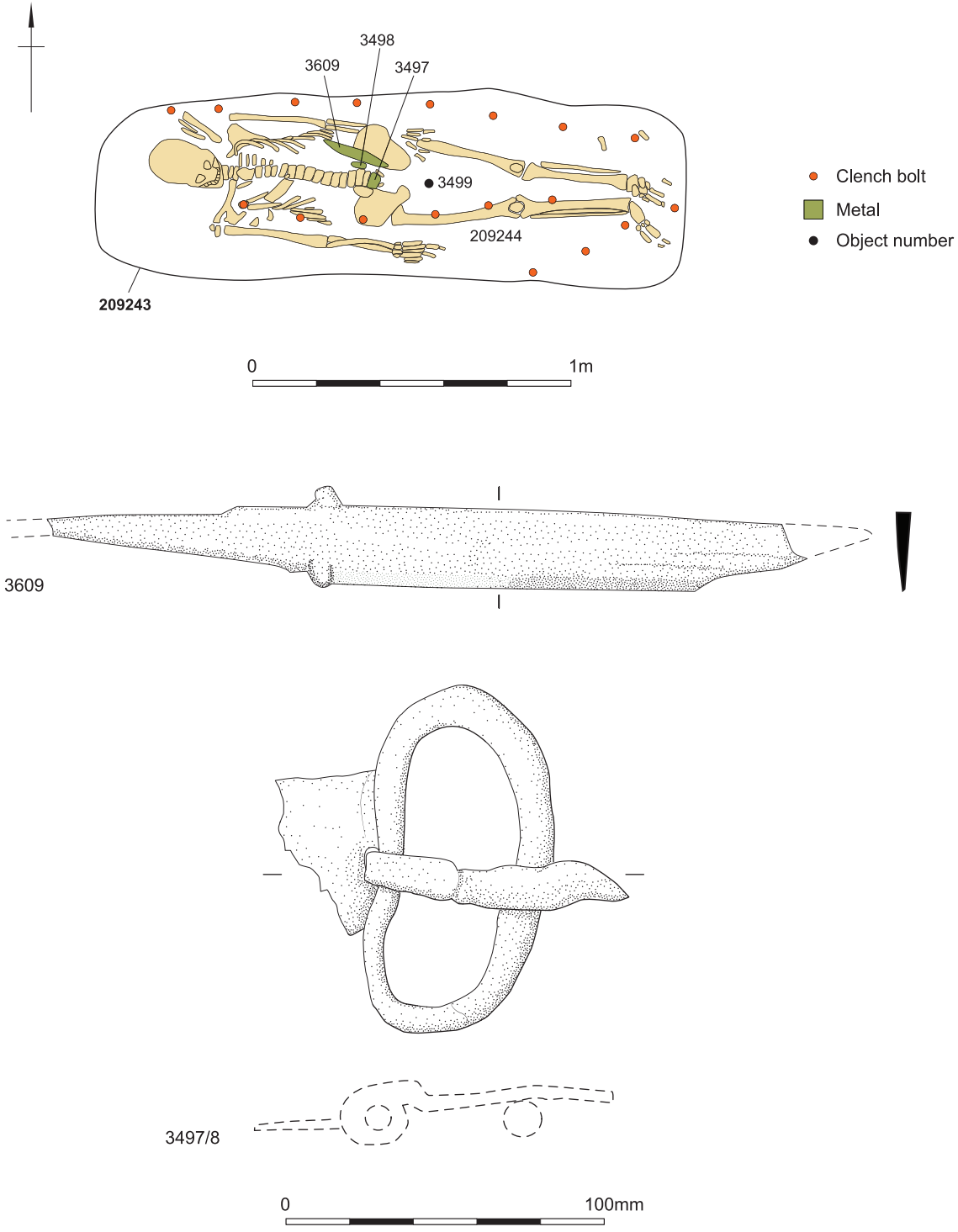


Fig 5.21 (above) Plan of grave 166141 (Zone 19)

Fig 5.22 (opposite, above) Plan of grave 209243 (Zone 19)

Fig 5.23 (opposite, below) Plan of grave 220011 (Zone 19)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3497
3499
209244
209243
Clench bolt
Metal
Object number
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3497/8
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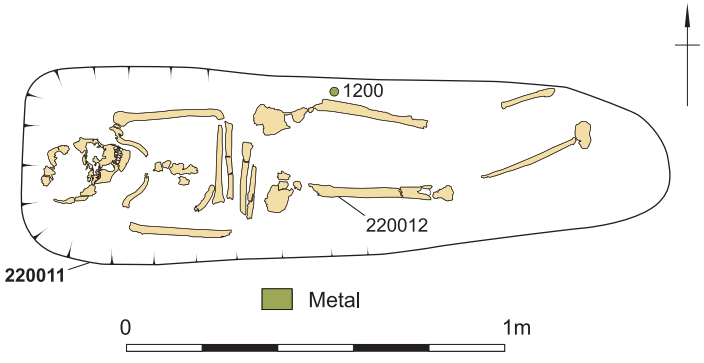
100mm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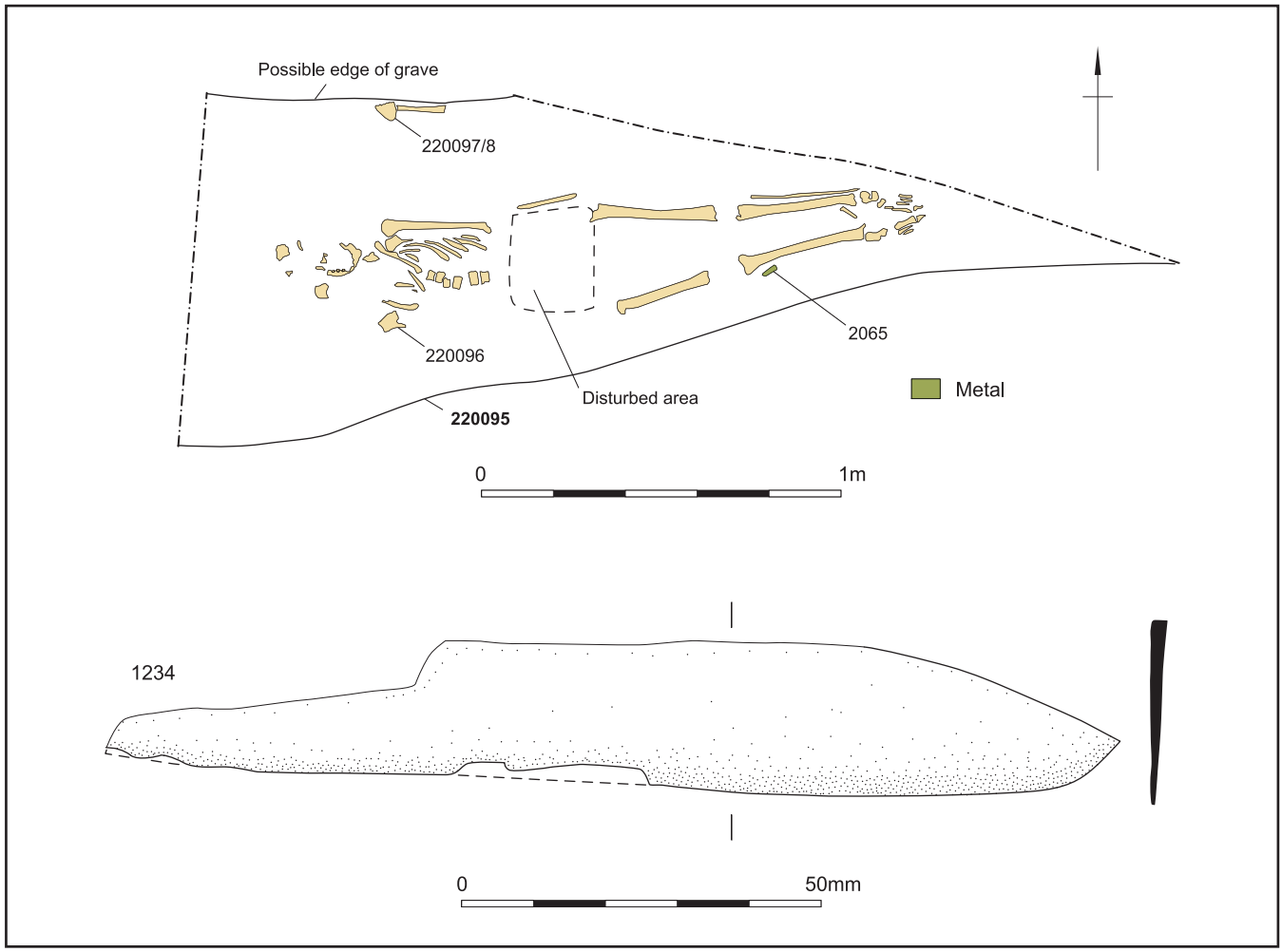


Fig 5.24 Plan of grave 220095 (Zone 19)

Human Remains: Burial is supine and extended, probable gap *c* 0.05m between head and west end of grave. *c* 40% skeletal recovery. Adult *c* 25–35 yr. ?Female.
Grave Goods:
ON 1200 11 fragments of wire, including curved fragments of ring, Fe, 11 fragments, possibly fittings from keys or chatelaine. Further wire fragments (3) found in sample.

Grave 220095 (Burial 220096 and 22097/8)
Fig 5.24
Grave: E–W, sub-rectangular with steep straight sides, flat base – 2.80 x 1.02m, 0.10m deep. Fill of mid- brown sandy silt with occasional chalk inclusions.
Human Remains: 220096 – Burial is supine and extended. *c* 45% skeletal recovery. Adult *c* 30–40 yr. Female.
220097/8 – redeposited, 3 bones. Adult >18 yr.
Grave Goods:
ON 1207 Nail, Fe, large nail head fragment.
ON 1234 Knife, Fe, whittle tang knife. The blade has slightly sinuous back and down-curved tip (not closely located).
ON 2065 Rivet, or bolt and rove, Fe. Bolt with slightly domed head and circular section shank. Diamond-shaped rove
ON 4672 Knife, Fe, 5 fragments. Whittle tang, or possibly plate tang, knife. Straight or slightly curved back; dropped edge with gently curved choil.
3 nail shank fragments from sample.

Grave 220109 (Burial 220110)
Fig 5.25
Grave: E–W, sub-rectangular with steep straight sides, flat base – 1.90 x 0.62m, 0.33m deep (base at 47.5mOD). Fill of mid- brown sandy silt with occasional chalk and frequent flint inclusions.
Human Remains: Burial is supine and extended, probable gap *c* 0.1m between head and west end of grave. *c* 85% skeletal recovery. Adult *c* 30–40 yr. Female.
Grave Goods:
ON 2093 Bead, glass, red.
ON 3430–3436, 3448–3449 and 4691 Probable girdle or belt, Cu alloy and Fe, with links of lenticular or flattened oval cross-section with Cu alloy terminal loops, eg, ONs 3430, 3435, 3448 and 3449. Some examples have attached Cu alloy figure-of-eight loops, eg, ONs 3431, 3432, 3435 and especially 3448 and 3449. ON 4691 is a Cu alloy figure-of-eight loop which may have been part of the girdle. At least 24 fragments survive. The best examples are ONs 3448 and 3449. The most complete link is represented by ON 3448 which is 77mm but lacks its terminal loops. The complete link and loops must have been at least 85mm long.
ON 3437 Pot, organic-tempered ware (EMS4), 54 sherds, 1 vessel, narrow-necked or pear-shaped globular jar, *c* 550–800 (possibly 7th–8th century).
ON 3450 Knife, Fe, Whittle tang knife with curved back and triangular section. Slight concave curve to edge. (x-ray shows possible trace of bolster).
ON 3456 Bead, glass, red.

Grave 220133 (Burial 220134)
Not illus
Grave: Irregular cut with moderate straight sides and a rounded base – 0.80 x 0.60m, 0.35m deep. Fill mid-brown sandy silt.

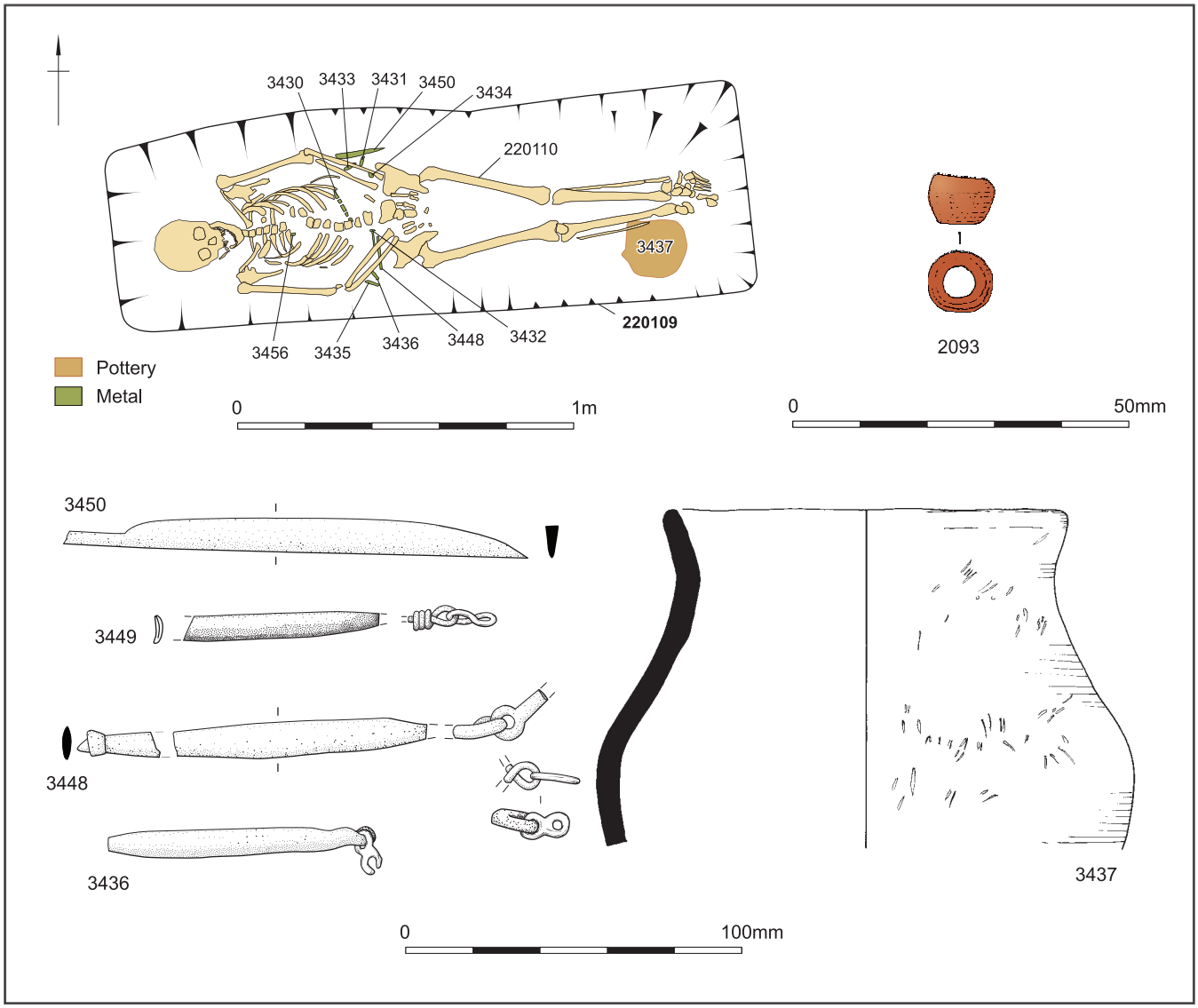


Fig 5.25 Plan of grave 220109 (Zone 19)

Human Remains: Disturbed burial. *c* 50% skeletal recovery. Adult *c* 35–45 yr. Female.

Grave 251044 (Burial 251046)

Fig 5.26

Grave: E–W, sub-rectangular with steep straight sides, irregular base – 2.00 x 0.50m, 0.32m deep (base at 48.96m OD). Fill of mid-light brown sandy silt.

Human Remains: Burial is supine and extended, probable gap *c* 0.05m between head and west end of grave. *c* 99% skeletal recovery. Adult *c* 18–23 yr. Male.

Grave Goods:

ON 1292 Nail, Fe, with slightly domed circular head and tapering shank, complete, passed through a fragment of strip or binding.

ON 2009 Nail, Fe, with small square head and square washer,

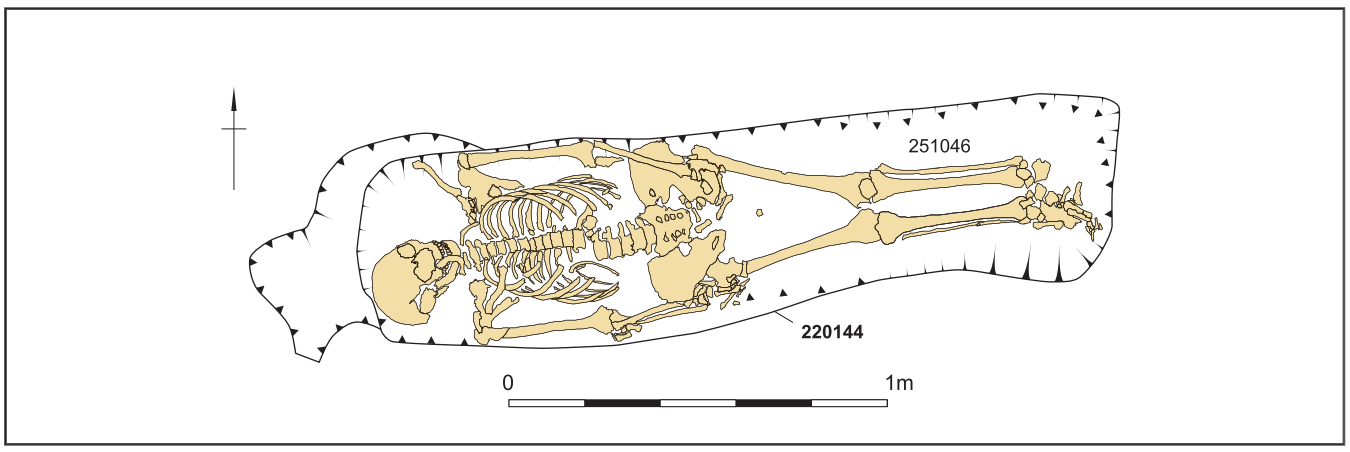
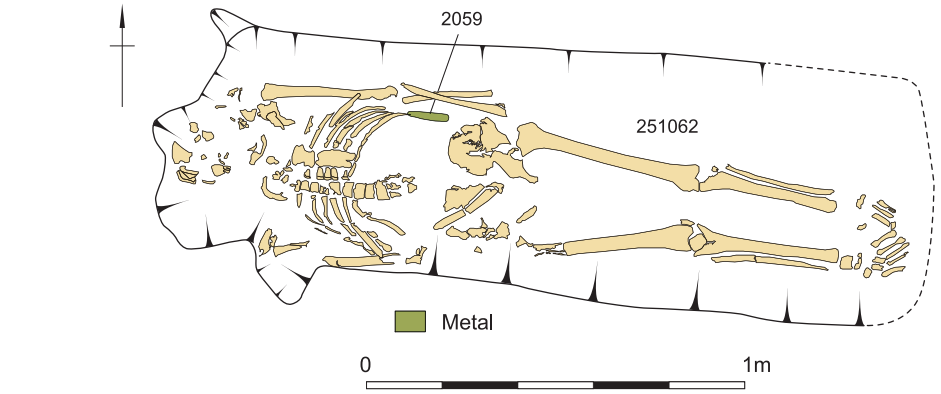
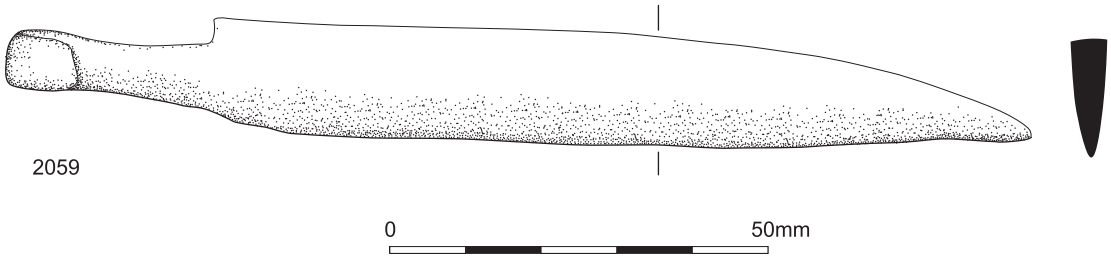
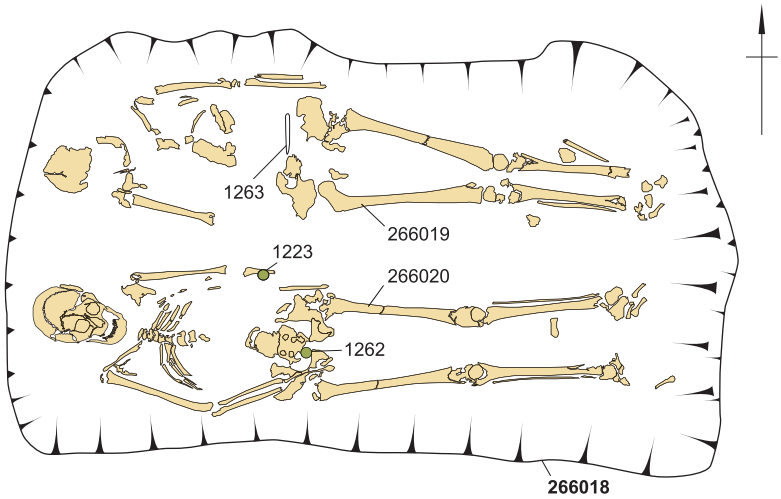


Fig 5.26 Plan of grave 251044 (Zone 19)

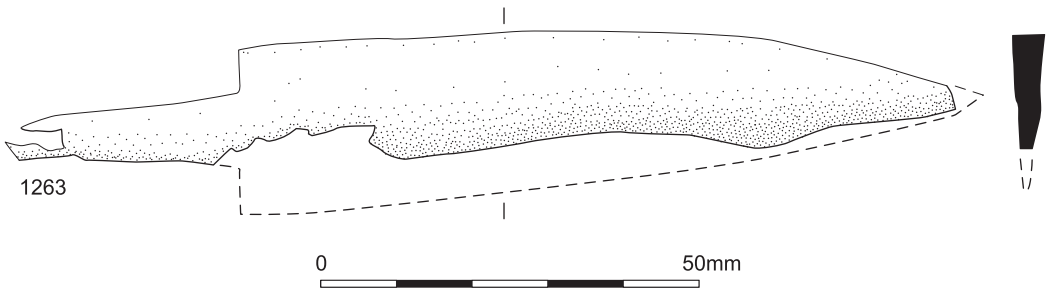

2059
251062
Metal
0
1m


2059

0
50mm


1263
266019
1223
266020
1262
266018


0
1m


1263

0
50mm

rather than large head. Mineral-preserved wood on lower part of shank.

Grave 251061 (Burial 251062)
Fig 5.27
Grave: E–W, sub-rectangular with steep straight sides, irregular base – 1.97 x 0.70m, 0.18m deep (base at 48.16m OD). Fill of mid-yellow brown sandy silt with moderate gravel and chalk inclusions.
Human Remains: Burial is supine and extended, head against west end of grave, *c* 65% skeletal recovery, adult *c* 30–40 yr. Male.
Grave Goods:
ON 2059 Knife, Fe, whittle tang knife with straight back and down curved tip, and straight edge (2 fragments).

Grave 252037 (no human remains)
Not illus
Grave: E–W, sub-rectangular with moderate straight sides, flat base – 2.43 x 0.92m, 0.36m deep. Fill of mid- greyish brown silty loam with occasional flint and chalk inclusions.
ON 1931, 1933–5, 1937, 1941, 1944 and 1946 L-shaped corner bindings, Fe.
ON 1800–2 Clench bolts or rivets, Fe.
Also, 21 nails and miscellaneous binding strip fragments, Fe; numerous fragments of Fe sheet.

Grave 252053 (no human remains)
Not illus
Grave: E–W, irregular sub-oval with gently sloping sides, irregular base – 2.02 x 0.76m, 0.27m deep. Fill of mid-brown silty clay loam with occasional flint and chalk inclusions.

Grave 266018 (Burials 266019 and 266020)
Fig 5.28
Grave: E–W, sub-rectangular with steep straight sides, flat base – 1.85 x 1.04m, 0.20m deep (base at 48.02m OD). Fill of mid-brown silty clay loam with frequent chalk inclusions.
Double burial.
Human Remains: 266019 – Burial is supine and extended, probable gap *c* 0.1m between head and west end of grave. *c* 60% skeletal recovery. Subadult *c* 14–16 yr. Male.
266020 – Burial is supine and extended, probable gap *c* 0.05m between head and west end of grave. *c* 70% skeletal recovery. Adult *c* 30–40 yr. Female.
Grave Goods:
ON 1223 Unidentified, Cu alloy, cast fragment.
ON 1262 Unidentified bone, possibly worked.
ON 1263 Knife, Fe, whittle tang knife with strongly angled back and cutting edge with convex curve.

Grave 267026 (Burial 267025)
Fig 5.29
Grave: ENE–WSW, sub-rectangular with steep straight sides, flat base – 2.77 x 1.00m, 0.44m deep (base at 48.1m OD). Fill of mid-brown clayey silt with moderate gravel and chalk inclusions. Shadow of coffin seen during excavation.
Human Remains: Burial is supine and extended, probable gap *c* 0.3m between head and WSW end of grave. *c* 90% skeletal recovery. Adult *c* 35–45 yr. Female.

Grave 275002 (Burial 275004)
Not illus
Grave: ENE–WSW, sub-rectangular with steep convex sides, irregular base – 2.47 x 0.86m, 0.45m deep (base at 47.99m OD). Fill of mid- brown silty sand.
Human Remains: Burial posture not known, grave disturbed. *c* 30% skeletal recovery. Adult >18 yr. ?Female.

Southern Cemetery 195119
The southern cemetery in Zone 19 lay to the south of hollow-way 126227 (Fig 5.30, Pl 5.5). The 16 graves in this group appear to have been arranged in a slightly curving band, perhaps suggesting the presence of a monument or other feature to the south, beyond the limit of excavation, which influenced their locations (Pl 5.6). However, recent geophysical survey in the field

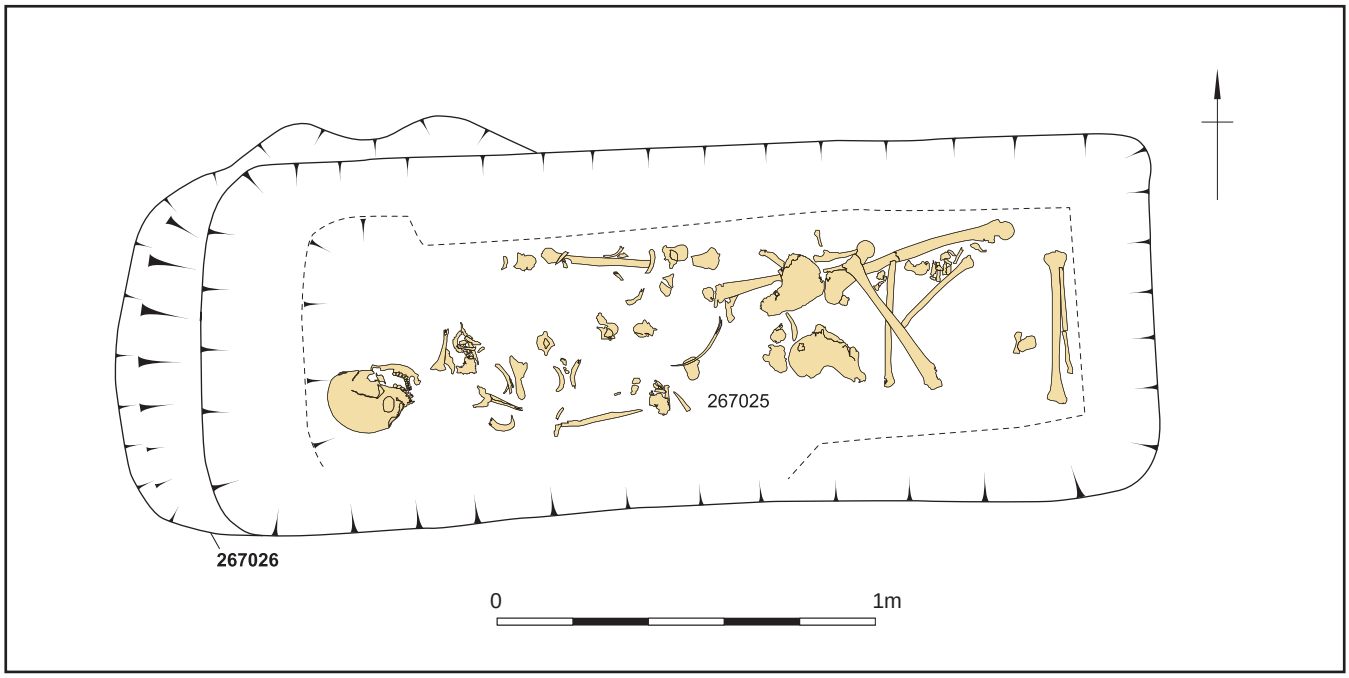


Fig 5.27 (opposite, above) Plan of grave 251061 (Zone 19)
Fig 5.28 (opposite, below) Plan of grave 266018 (Zone 19)
Fig 5.29 (above) Plan of grave 267026 (Zone 19)

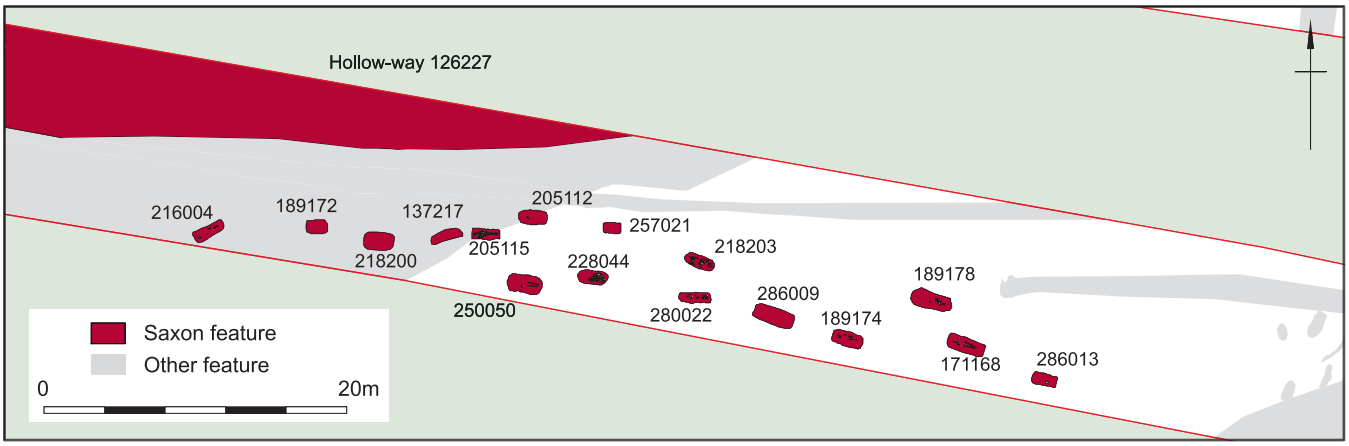


Fig 5.30 Plan of early Saxon cemetery 195119 (Zone 19)

immediately to the south has revealed nothing in this location (Wardell Armstrong 2013).

The graves were all aligned approximately west–east, and in all six cases where burial position could be determined the bodies were laid in an extended supine position, with their heads to the west. The grave cuts were generally deeper and more regular than those in the northern cemetery, though the majority of the human remains were in a very poor state of preservation with the bones either degraded or (in some cases) disturbed, probably through grave robbing.

There were five graves that exhibited evidence of extensive disturbance (171168, 189178, 216004, 228044, and 286013), perhaps indicating grave robbing in antiquity (Pl 5.7). Also in the southern cemetery were two graves that contained 'stacked' burials (218203 and 250050), with one burial on top of another in the same grave, probably representing later insertions. There were no examples of such disturbance or 'stacking' in the northern cemetery. Two graves without human remains (189172 and 218200) have been noted above, in addition to the two examples in the northern cemetery.

There were fewer grave goods recovered from the southern cemetery compared to the northern cemetery, although this may also be a result of grave robbing. The richest grave was 171168, which contained a pair of shears, numerous iron objects and fragments of a chain which together represented a probable bag group and a chatelaine group, a silver scutiform pendant and a copper alloy finger-ring.

Grave 250050 contained an iron shield boss and probable sword pommel, grave 189174 a spearhead, and in grave 205115 a bone comb lay on the skull, perhaps originally placed in the hair. The grave goods generally point to a 7th-century date, though a few might indicate burial taking place at the end of the 6th, whilst the shears could see the use of the cemetery extending into the early 8th century.

Pl 5.5 Work in progress on southern cemetery 195119 in middle distance, with gas pipe installation in foreground (Zone 19a to left/Zone 19 to right; view from east)

Pl 5.6 Southern cemetery 195119 (Zone 19a to left/Zone 19 to right; view from east)

Pl 5.7 Grave 228044 (Zone 19; view from east)

Grave catalogue

Grave 137217 (Burial 137216)

Not illus

Grave: ENE–WSW, sub-rectangular with steep straight sides, flat base – 2.04m x 1.00m, 0.67m deep. Fill of mid-grey brown sandy silt.

Human Remains: Burial position unknown, disturbed, one longbone shaft + scraps, adult >18 yr. Female.

Grave 171168/171171 (Burial 171170)

Fig 5.31–33

Grave: ESE–WNW, sub-rectangular with moderate to steep straight sides, flat base – 2.66 x 1.04m, 0.89m deep (base at 45.59m OD). Fill of light brown silty loam with common chalk and some flint inclusions.

Human Remains: Burial is supine and extended, probable gap 0.2m between head and WNW end of grave. *c* 25% skeletal recovery, adult *c* 30–40 yr. Female

Grave Goods:

ON 1835 Scutiform pendant, Ag, with central boss and probably 4 smaller bosses. There are very fine punched holes around the very edge of the pendant. Just over half survives. D: 29mm.

ON 1837, ON 1841–1842, ON 1844–1845, ON 4763 and 1873 5 complete necklace rings formed from thin Cu alloy wire, with twisted junction, and 1 ring fragment (ON 1873). D: 18 x 19mm; D: 15.5 x 14mm; D: 19.5 x 20mm; D: 17.5mm; D: 17 x 18mm; D: 18.5 x 19mm.

ON 1838 Ring, Cu alloy, with plain hoop of circular section and flat circular bezel formed from coiled wire and attached by fine coiled wire. D: 22mm.

ON 1839 Bead, glass, annular, blue glass with whitish streaks throughout.

ON 1840 Unidentified, Cu alloy, small hemispherical domed object with 3 small holes. The holes presumably served to secure the object, perhaps by stitching rather than by pinning. D: 8mm.

ON 1841–2 Wire, Cu alloy, wire loop with ends twisted over loop.

ON 1843 Bead, amethyst.

ON 1844–5 Wire, Cu alloy, wire loop with ends twisted over loop.

ON 1846 Bead, glass, blue, drawn cylinder/rod.

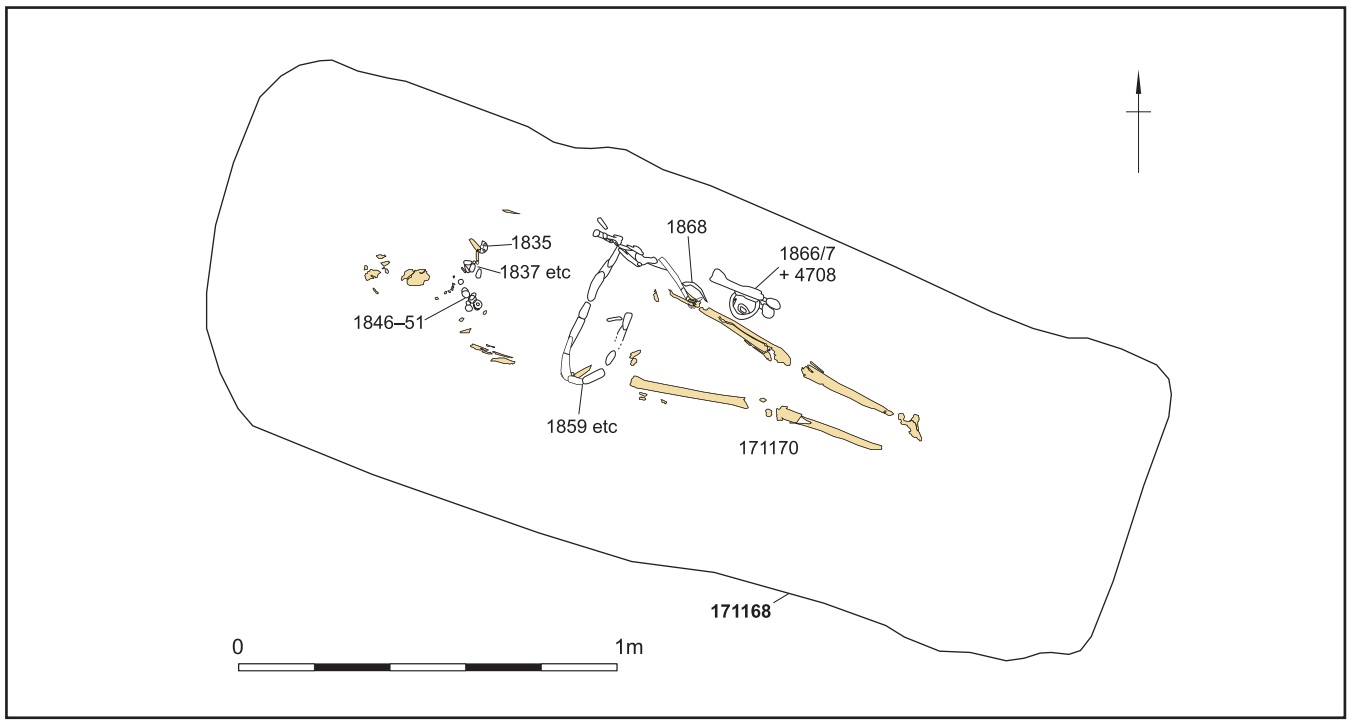


Fig 5.31 Plan of grave 171168 (Zone 19)

ON 1847 Bead, amethyst.
ON 1848 Bead, amethyst, almost oval cross-section, slightly damaged one end.
ON 1849 Bead, amethyst.
ON 1850 Bead, amethyst, almost triangular cross-section.
ONs 1851–2 Beads, glass, orange.
ONs 1853, 1856, 1857, 1859, 1860 and 1885 Probable girdle or belt with links of lenticular or flattened oval cross-section, with wire loops at each end. At least 14 fragments survive. The form is best illustrated by ONs 1856 1857 and 1859 and 1885, each of which comprises more than half of a link and the loop junction with the next link. ON 1885 is the most complete link. Fe. ON 1856: L extant: 54mm; ON 1857: L extant: 65mm; ON 1859: L extant 68mm. ON 1885: L extant 81mm.
ON 1854 Unidentified, Fe, bar fragment and a lump, possible mineralised textile present.
ON 1855 Strap end, Fe, possible double riveted strap end with mineral-preserved remains attached.
ON 1858 Bar, Fe, bar fragment, possibly from item worn at belt, mineralised remains attached.
ON 1861–5 Chatelaine, Fe, probably part of a chatelaine, mineralised remains attached.
ON 1866, 4705 and 4706 Bag group, includes bundle of keys, strips and rods (ON 4707 below). Context 171170:

a) Bag ring. Iron ring with leaf-shaped fragments fused opposite sides. Fe. D: 73 x 70mm. ON 1866
b) Linked rings or loops of iron wire. Fe. The larger: L: 25mm; W: 19mm; the smaller loop: L: 21mm; W: 17.5mm. ON 4706.
c) Ring or loop fragments. 7 small fragments. Fe. ON 4706.
d) Rod of circular or oval section. One end resting on ring (a) and the other under the ring. It lay on the textile surface (No. 8, i below). Possibly a girdle link. Fe. L: 50mm. ON 4705.

ON 1867 Chatelaine group. Context 117170. ON 1867:

a) Lift key with rolled over loop with attached fragment of small ring. Fe. L: 124mm.
b) Key fragment and 3 girdle links forming part of chatelaine. Fe. L: 77mm.
c) 3 x girdle links. Fe.
d) Length of rod, possibly part of girdle. Fe. L: 47mm.
e) Length of rod. Fe. L: 95mm.

ON 1868, 1870 and 4702–4704 Shears group:

a) Pair of shears. Fe. Overall L: 165mm; L of blades: 73mm and 75mm. ON 1868.
b) Whittle tang knife with angled back. Mineral-preserved organics on handle. Fe. Overall L: 128mm; L of blade: *c* 95mm; W of blade: 18mm. ON 4703.
c) Fragment of bone comb and case with Cu alloy fittings, including slide with attached chain (see d below). Cu alloy and bone. Comb and case: L extant: 62mm; W: 55mm. ON 4704.
d) Length of Cu alloy chain comprising 6 S-shaped links. One large link (L: 17mm) and 5 smaller links (L: 12–14mm). Originally attached to comb case (c above). Cu alloy. L: 69mm. ON 4704.
e) Probable girdle link of oval section and narrowing to each end. Fe. L: 71mm. ON 4702.
f) Girdle link. Fused to shears. Fe. L: 56mm. ON 1868.

ON 1869 Tapered thin strip, partly rolled at the narrower end. Cu alloy. L: 30mm; W: 8mm, possibly part of a pair of tweezers.
ON 1871 Lock or bolt plate, 2 fragments. Fe. L: 118mm.
ON 1872 Nail, head fragment only, Fe. Circular slightly domed head with mineral-preserved wood.
ON 1873 Wire, Cu alloy, small arc of thin wire, possible purse fitting.
ON 1874 Ring and junction. Fragment of plain ring and attached junction plate. Fe. L extant: 35mm; L of junction plate: 25mm.
ON 1875 Nail, Fe, small nail head, with mineral-preserved wood.
ON 1876 Small link or catch formed from rectangular section bar with flatted and pierced circular terminals, one terminal broken, the other is complete and has stub of pin or nail *in situ*. Cu alloy. L: 17mm.

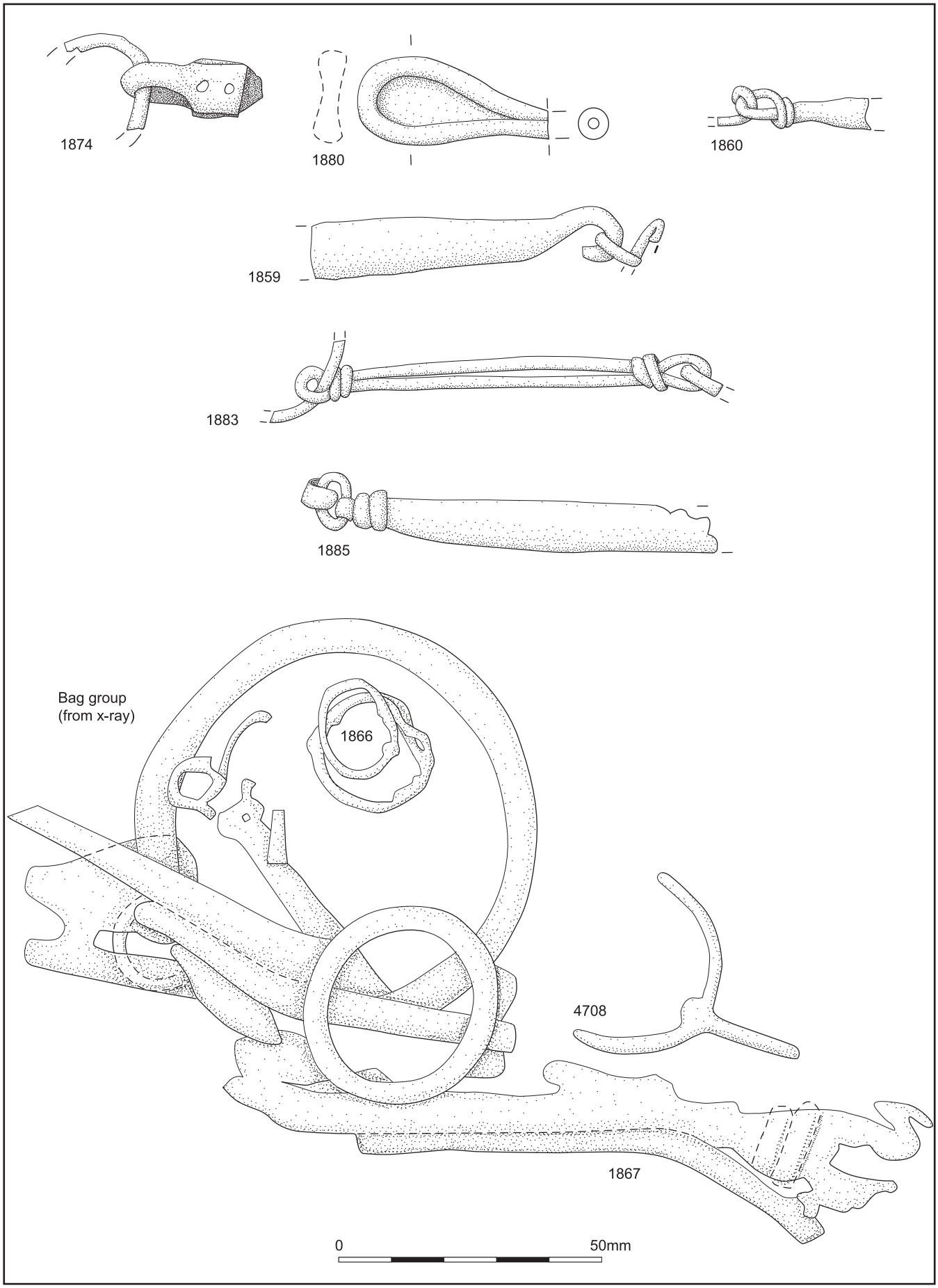


Fig 5.32 Grave 171168 – grave goods (Zone 19)

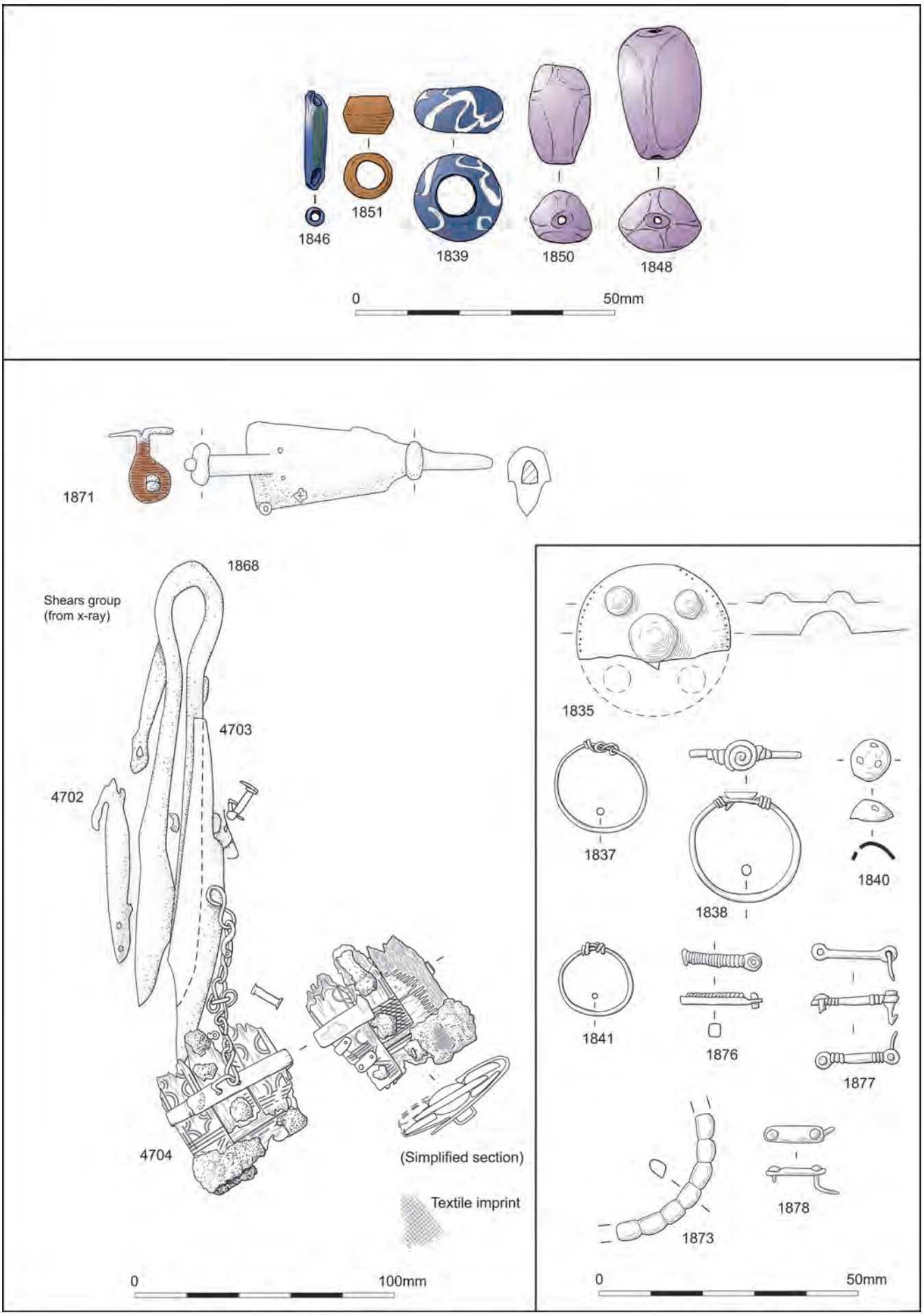


Fig 5.33 Grave 171168 – grave goods (Zone 19)

ON 1877 Small link or catch formed from tapered bar of rectangular section with flatted and pierced circular terminal at one end and hook at the other end. Nails or pins *in situ* at each end. Cu alloy. L: 17mm.
ON 1878 Small link or catch formed from strip pierced at one end with a hook at the other end. Nails or pins *in situ* at each end. Cu alloy. L: 17mm.
ON 1879 Ring and junction. Plain ring (6 fragments) with 2 narrow strips of copper alloy forming a junction plate. Fe and Cu alloy.
ON 1880 Flattened teardrop-shaped object, possibly lead. Pb? L: 40mm; W: 24mm.
ON 1881 Clip or staple, encrusted. Fe.
ON 1882 Ring, 2 x curved fragments from a simple ring of uncertain thin cross-section. Fe.
ON 1883 Looped link. Link formed from thin wire, with fragment of ring at one end. Fe. L overall: 87mm; L of link: 78mm.
ON 1884 Wire fragment, possibly from chain link. Cu alloy. L: 10mm.
ON 4671 Sheet, Fe, sheet fragment.
ON 4705 Rod, Fe, rod fragment, part of bag ring group of objects.
ON 4706 Unidentified, Fe, 2 x small hoops/rings joined together, part of bag ring group of objects.
ON 4707 Bundle of possible keys, strips and rods. Part of bag group (ON 1866 etc). Overall L: 100mm. Context 171170:

a) Plain ring of oval section. Cu alloy. D: 37mm.
b) Possible key, Fe. Strip with possible looped terminal at one end, broken at the other end. 2 fragments.
c) Small ring fragment. Fe.
d) Small ring. Fe.
e) Strip. Fe.
f) Broad strip with terminal loop. Possible key. Fe.
g) Rod with barley-sugar twist and terminal loop. Fe.
h) Strip, slightly tapered, with incomplete looped terminal at wider end, Fe.
i) Textile, mineralised. Patches of coarse textile in strips were identified overlaying a finer mineralised textile.

ON 4708 Unidentified, Fe, Y-shaped fragment of object comprising incomplete ring with rod attached, ?part of bag ring group of objects.

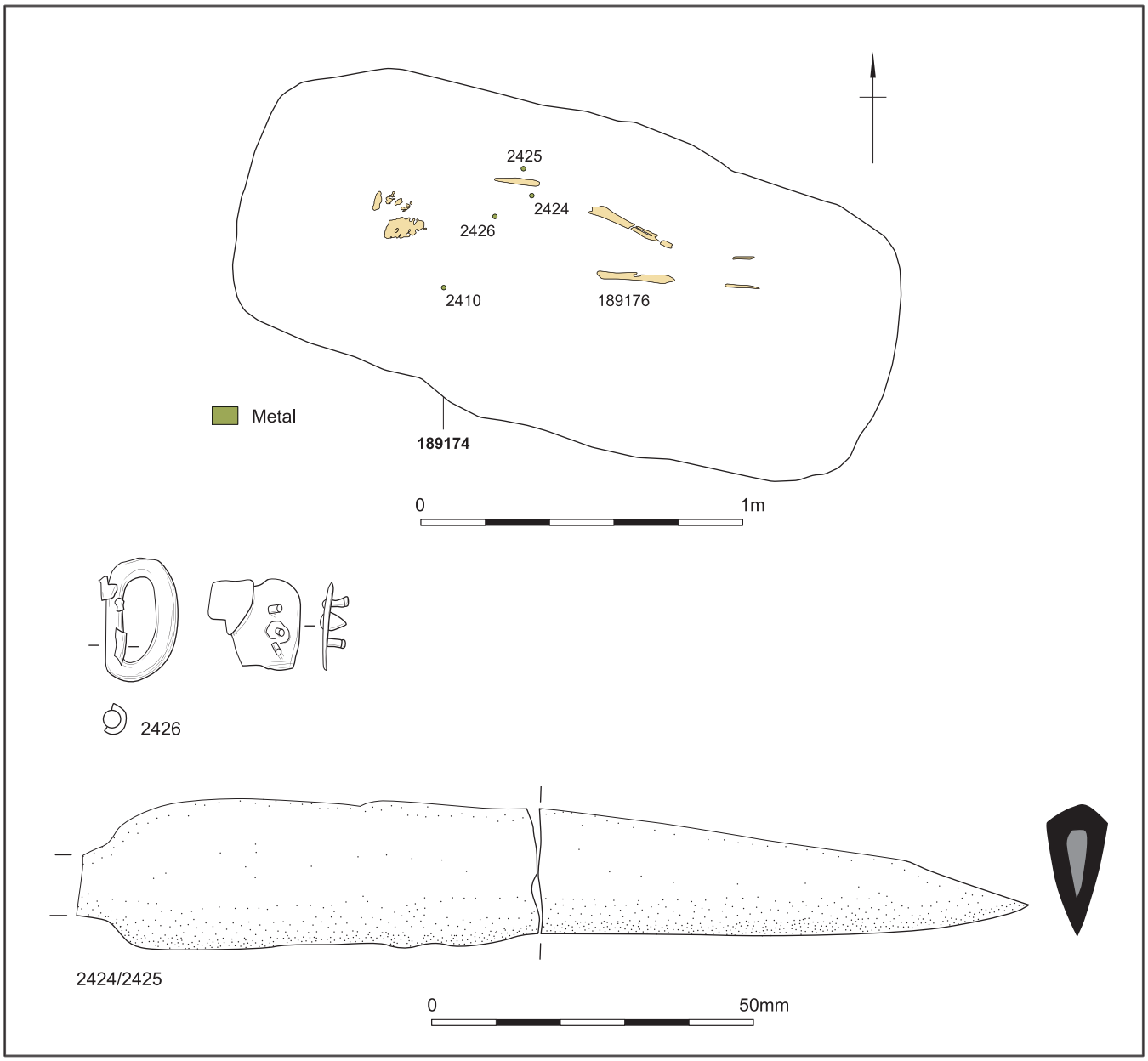


Fig 5.34 Plan of grave 189174 (Zone 19)

ON 4763 Wire, Cu alloy, wire suspension loop, possibly from a chatelaine.

Grave 189172 (no human remains)
Not illus
Grave: E–W sub-rectangular with moderate straight sides, flat base – 1.43 x 0.94m, 0.62m deep. Fill of mid-greyish brown clayey silt.

Grave 189174 (Burial 189176)
Fig 5.34
Grave: ESE–WNW, sub-rectangular with steep straight sides, flat base – 2.20 x 0.97m, 0.82m deep (base at 45.53m OD). Fill of mid- grey brown silty clay loam.
Human Remains: Burial is supine and extended, only part remained. *c* 5% skeletal recovery. Adult *c* 25–35 yr.
Grave Goods:
ON 2410 Spearhead, Fe, with incomplete leaf-shape blade, and long split socket. No obvious nail/nail hole. L extant: 202mm.
ON 2424 and 2425 Knife, Fe, whittle tang knife with tapered blade.
ON 2426 Buckle, Cu alloy, small buckle, D-shaped buckle frame and part of thin sheet buckle plate. The buckle plate fragment has 2 angled corners and 3 extant rivets. 2 fragments.
ON 4015 Possible boot cleat, Fe, 2 fragments.

Grave 189178 (Burial 189179/189180)
Fig 5.35
Grave: ESE–WNW, sub-rectangular with steep convex/ irregular sides, flat base – 2.87 x 1.05m, 0.12m deep (base at 46.44m OD). Fill of mid-grey brown silty clay loam.
Human Remains: Burial is disturbed and disarticulated. *c* 20% skeletal recovery, adult >35 yr. ?Female.
Grave Goods:
ON 3041 Unidentified, Fe, ?knife blade fragment.
ON 3042 Nail, Fe, shank fragment.
ON 3043 Link, Fe, formed from wire and looped at each end.
ON 3044 Knife, Fe, whittle tang knife blade, incomplete. Extant portion of blade has triangular section and parallel edges.
ON 4681 Sheet, Cu alloy, 3 tiny strip fragments.
ON 4756 Unidentified, Fe, possible knife blade tip/fragment.

Grave 205112 (Burial 205114)
Not illus
Grave: E–W, sub-rectangular with moderate irregular sides, flat base – 1.50 x 0.60mm, 0.60mm deep (base at 46.08m OD). Fill of mid-light brown silty loam.

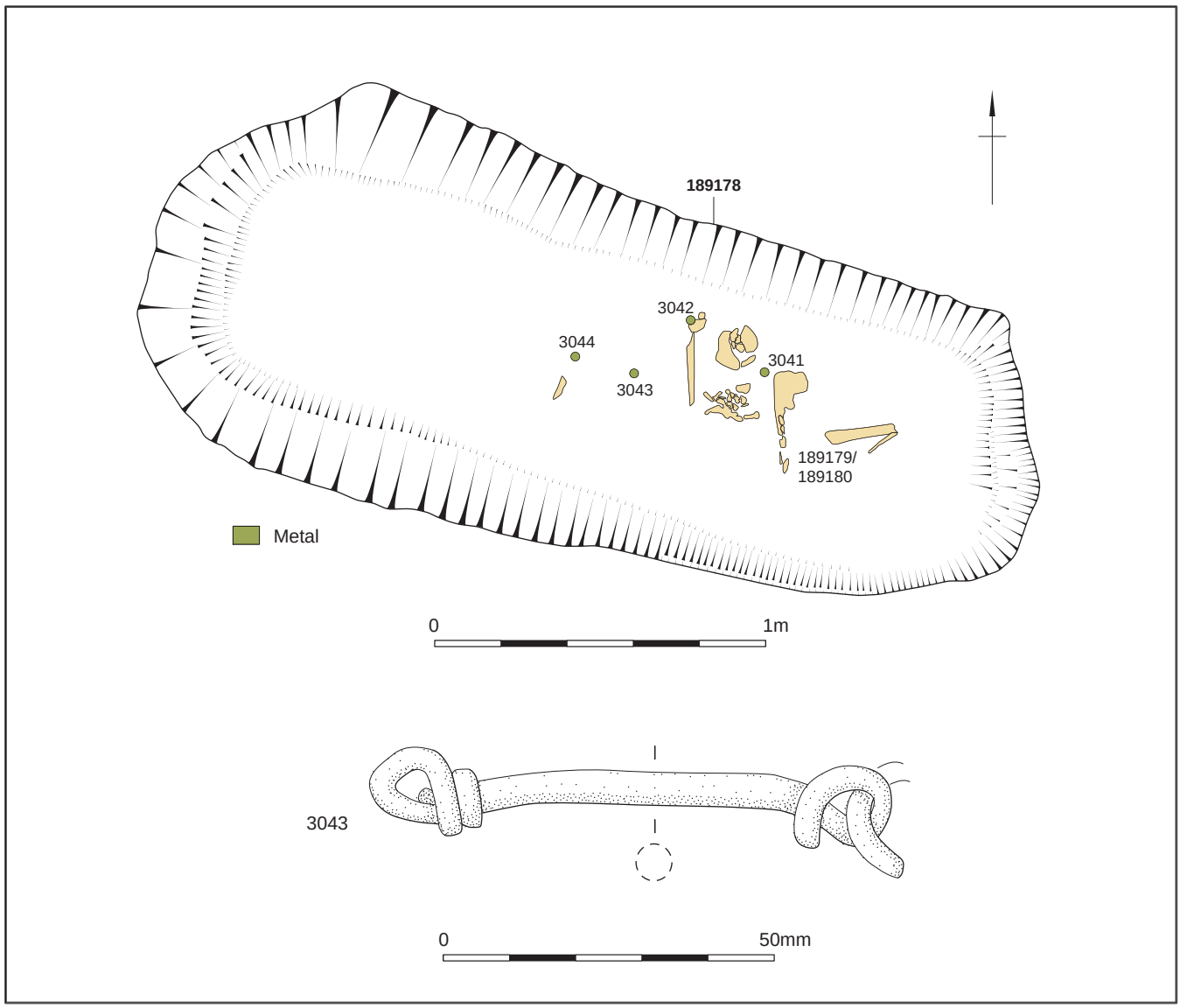


Fig 5.35 Plan of grave 189178 (Zone 19)

Human Remains: Only one longbone shaft and a few scraps. Infant *c* 0.5–1.5 yr.

Grave 205115 (Burial 205117)
Fig 5.36
Grave: E–W, sub-rectangular with steep, straight sides, flat base – 1.87 x 0.73m, 0.50m deep (base at 45.86m OD). Fill of greyish yellow loamy sand, frequent chalk inclusions.
Human Remains: Burial is supine and extended, left leg crossed over right, head against west end of grave. *c* 98% skeletal recovery. Adult *c* 40–50 yr. Female.
Grave Goods:
ON 2413 Comb, animal bone, 20 large fragments, many teeth fragments, double-sided, traces of Fe rivets.
ON 2420 Knife, Fe, whittle tang knife with curved edge and straight back and down curved tip.
ON 2420bis Possible awls (3), Fe. 1 probable awl, square section tapering to each end (L: 78mm). 2 square section bars, possibly awls, incomplete. (L: 69mm & 75mm).

Grave 216004 (Burial 216005)
Fig 5.37
Grave: NE–SW, sub-rectangular with steep straight sides, flat base – 2.10 x 0.80m, 0.70m deep (base at 45.66m OD). Fill of mid-brown sandy silt with frequent flint inclusions.
Human Remains: Burial is disturbed, position not known. *c* 10% skeletal recovery. Adult >18 yr.
Grave Goods:
ON 2409 Girdle links, Fe. At least 5 links formed from thin wire with looped ends. Possibly a chatelaine. L: 99mm.

Grave 218200 (no human remains)
Not illus
Grave: E–W, sub-rectangular with steep straight sides, flat base – 1.66 x 0.75m, 1.05m deep. Lower fill of dark brown silty loam with occasional flint and chalk inclusions; middle fill of light greyish brown silty clay loam with common/abundant inclusions of flint nodules and chalk lumps; upper fill of orange brown silty clay loam.
Grave Goods:
ON 1831 Small spearhead, Fe, socketed with broad leaf-shaped blade and long split socket. Fe. L: 91mm; Blade W: 24mm; D of socket: 16mm.
ON 1832–3 Nail shank fragment, Fe.
ON 1834 Buckle plate, Cu alloy, fragment of small plain buckle plate formed from folded Cu alloy sheet. No obvious decoration. Precise form unclear. Extant L: 21mm; Extant W: 13mm.

Grave 218203 (Burials 218205 and 218207)
Fig 5.38
Grave: ESE–WNW, sub-rectangular with moderate to steep straight sides, flat base – 2.10m x 0.93m, 0.69m deep (base at 45.72m OD). Fill of mid- to light grey brown silty clay loam. Stacked burial.
Human Remains: 218205 – Burial is disturbed, position not known. *c* 60% skeletal recovery. Adult *c* 30–35 yr. Male
218207 – Burial is disturbed, position not known. *c* 25% skeletal recovery. Adult >45 yr. Female.
Grave Goods:
ON 2415 Knife, Fe, possible knife blade with mineral preserved wood on faces.

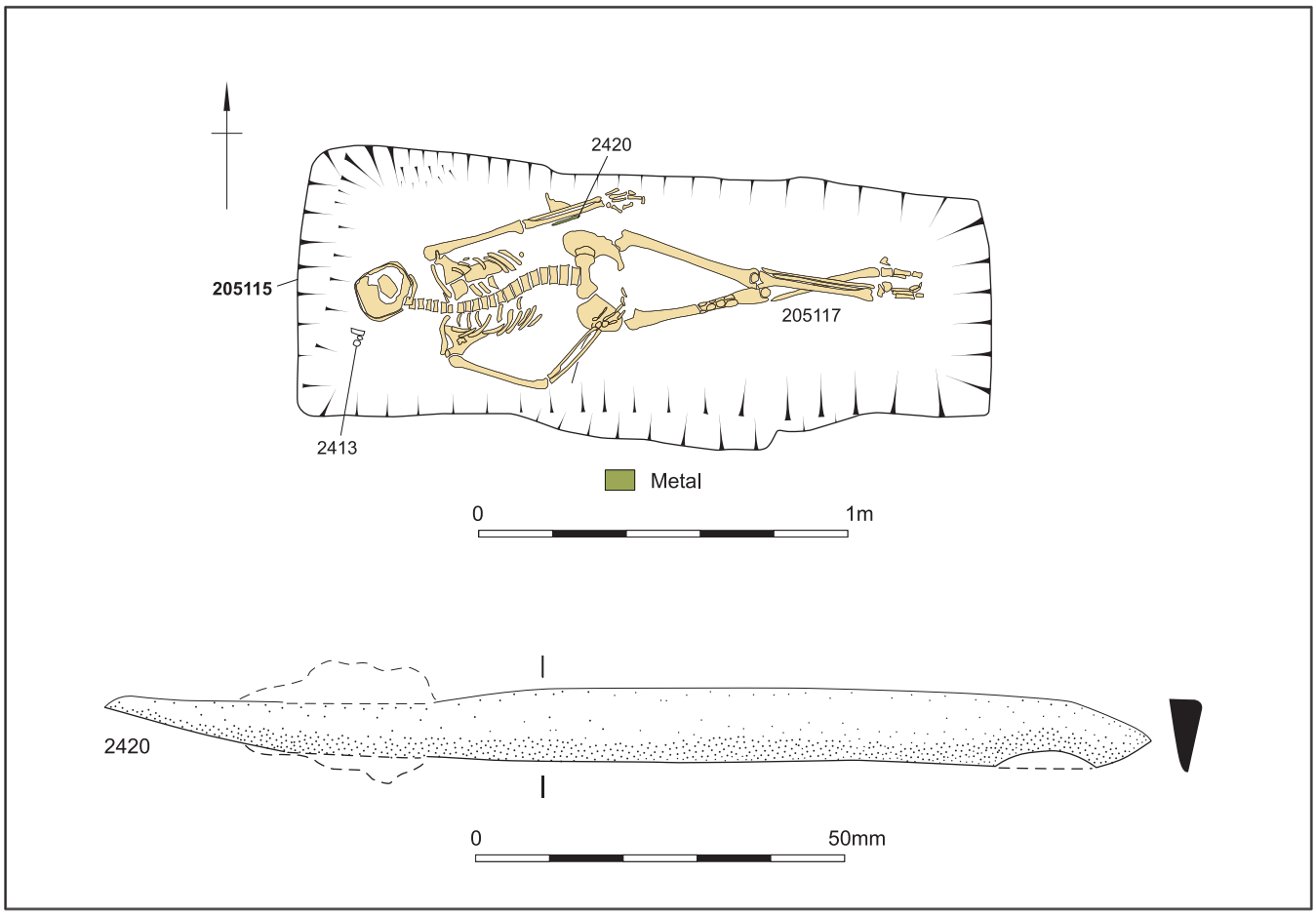


Fig 5.36 Plan of grave 205115 (Zone 19)

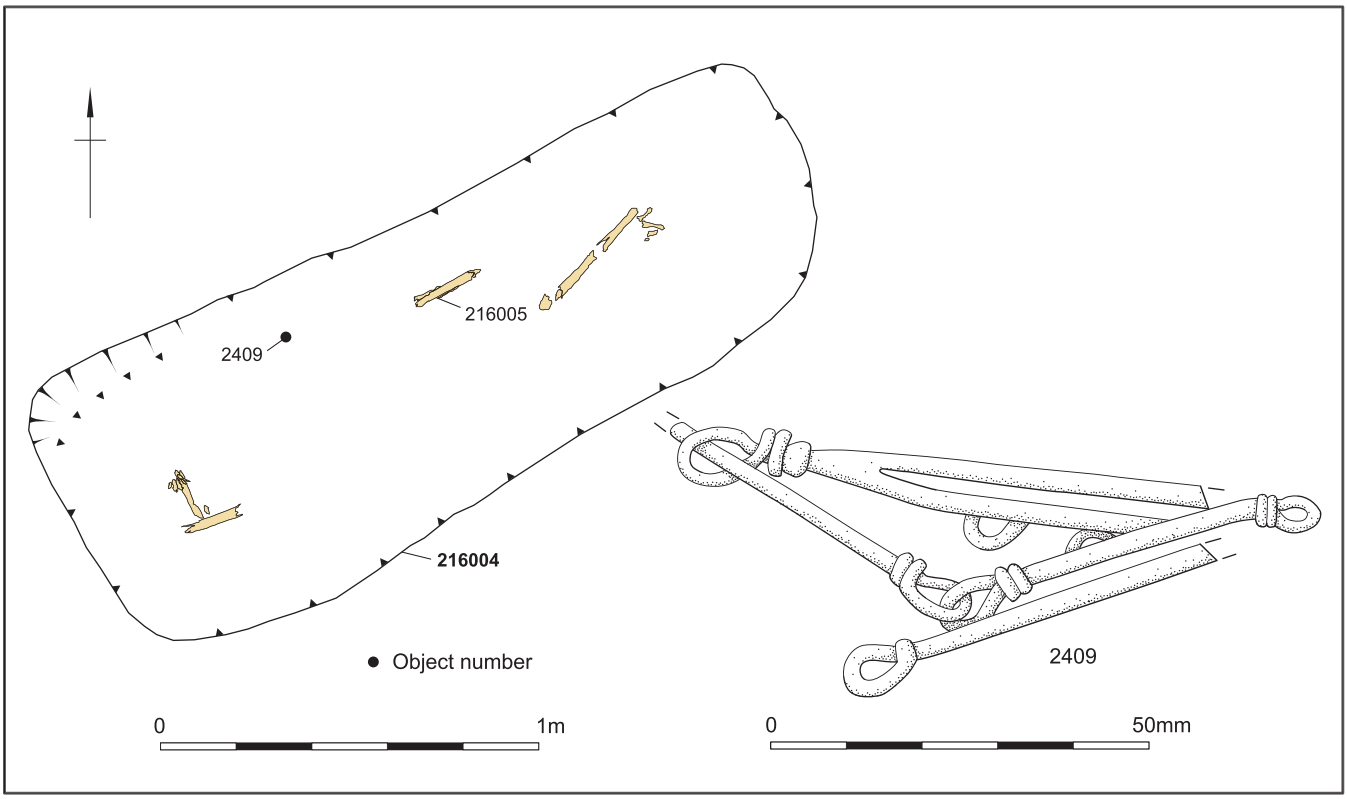


Fig 5.37 Plan of grave 216004 (Zone 19)

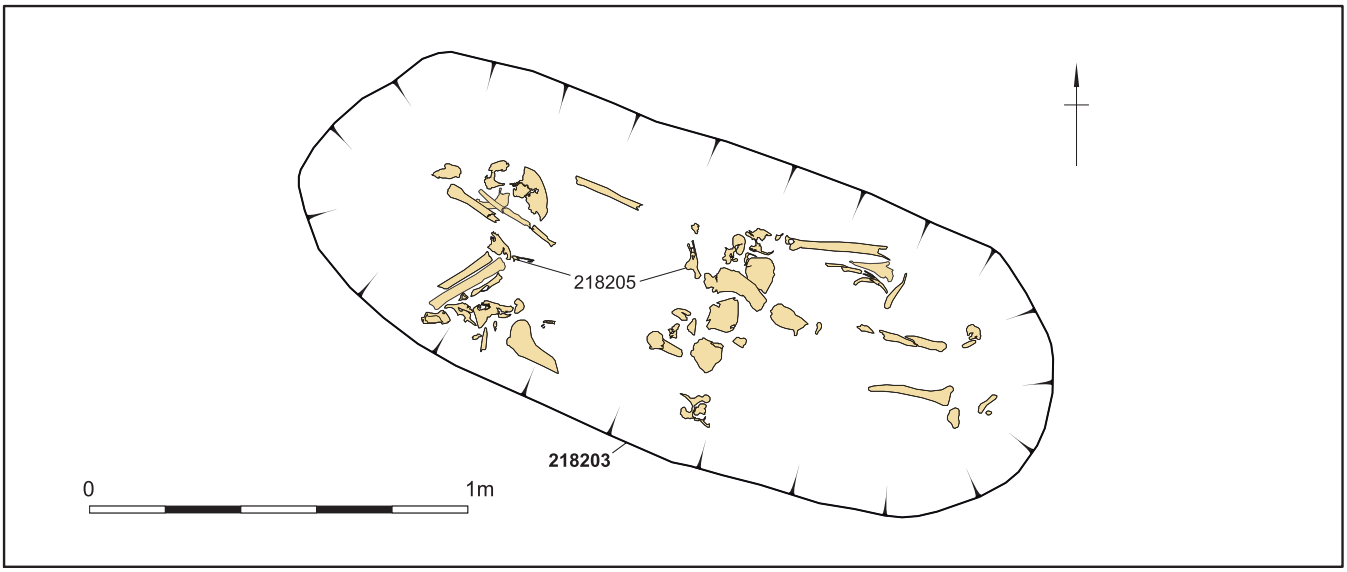


Fig 5.38 Plan of grave 218203 (Zone 19)

Grave 228044 (Burial 228045)
Fig 5.39; Pl 5.7
Grave: E–W, sub-rectangular with moderate, straight sides, flat base – 2.05m x 0.95m, 0.46m deep (base at 45.92m OD). Fill of mid- yellow brown silty clay loam with moderate chalk inclusions.
Human Remains: Burial is disturbed, position not known. *c* 90% skeletal recovery. Adult *c* 25–35 yr. Female.
Grave Goods:
ON 2405 Tweezers, Cu alloy, simple parallel sided jaws.
ON 2406 Knife, Fe, 2 fragments, whittle tang knife blade. Parallel sided blade with straight back and steeply angled tip and triangular cross-section.
ON 2407 Nail, Fe, large nail, incomplete, with flat circular head, and also nail shank fragment.
ON 2408 Knife, Fe, in 2 fragments, blade with possible plate tang. Incomplete tapered blade of triangular section. Mineral-preserved remains.
ON 2414 Buckle, Cu alloy, with small oval frame and fixed trilobate plate with narrow extension with 2 lugs with washers.
ON 2417 Unidentified, animal bone, possible bead.

Grave 250050 (Burials 250052 and 250054)
Fig 5.40
Grave: ESE–WNW, sub-rectangular with steep straight sides, flat base – 2.34 x 1.48m, 0.97m deep (base at 45.44m OD).

Fill of dark reddish brown sandy silt. Stacked burial.
Human Remains: 250052 – Burial is supine and extended, only lower part remains. *c* 15% skeletal recovery, adult >45 yr. ?Male.
250054 – disturbed/redeposited. *c* 35% skeletal recovery. Adult >50 yr. Male.
Grave Goods:
ON 2411 Flat fragment, Fe, with mineral-preserved wood and 1 or possibly 2 small rivets. Possibly from scale tang.
ON 2412 Elongated plain pyramidal or 'cocked hat' pommel (Cu alloy) and small plate (Cu alloy) mounted on an iron tang. Possibly the hilt guard of a knife or dagger.
ON 2421 Shield boss, Fe, with narrow flange, slightly pointed cone; the tip of the latter is bent over. Also strip with 2, possibly 3 nail holes (2 fragments).
ON 2422 Plate, Fe, plate or sheet fragments, irregular. One large with 1 possible nail hole, and 7 small fragments.

Grave 257021 (Burial 257020)
Not illus
Grave: E–W, sub-rectangular with steep straight sides and a flat base – 1.20 x 0.70m, 0.25m deep. Fill of greyish brown silty loam.
Human Remains: Teeth and a few scraps only. Infant *c* 2.5–3.5 yr.

Grave 280022 (Burial 280023)
Fig 5.41
Grave: ESE–WNW, sub-rectangular with steep straight sides, irregular base – 2.12 x 0.72m, 0.75m deep (base at 45.54m OD). Fill of dark orange sandy silt loam.
Human Remains: Burial is supine and extended, coffined burial. *c* 15% skeletal recovery. Adult >45 yr. Female.
Grave Goods:
ON 2416 Buckle, Cu alloy, with oval frame and triangular plate with lines of punched decoration.
ON 2418 Knife, Fe, Whittle tang knife (3 fragments), poorly preserved. Straight back with angled tip.
ON 2419 Unidentified, glass, fragment of vessel glass.

Grave 286016 (Burial 286011)
Fig 5.42
Grave: E–W, sub-rectangular with steep straight sides, flat base – 2.74 x 1.10m, 0.90m deep (base at 45.39m OD). Fill of light grey brown silt.
Human Remains: Burial is disturbed, position not known. *c* 5% skeletal recovery. Adult *c* 20–30 yr. ?Male.
Grave Goods:
ON 2400 Spearhead, Fe, small leaf-shaped spearhead, with long socket. Fe. L overall: 184mm; L of head: 105mm; W of head: 24.5mm; D of socket: 17mm.
ON 2401 and 2402 Sheet, Cu alloy, 6 small sheet fragments.
ON 2403 Sheet, Cu alloy, small plate fragment.

Grave 286013 (Burial 286015)
Fig 5.43
Grave: ESE–WNW, sub-rectangular with steep straight sides, flat base – 1.74 x 0.78m, 0.48m deep (base at 45.88m OD). Fill of mid-brown orange sandy silt.
Human Remains: Burial position unknown, disturbed, remains redeposited. *c* 5% skeletal recovery. Adult >18 yr. ?Male.
Grave Goods:
ON 1888 Knife, Fe, blade fragment, with sharply curved back.
ON 1889 Girdle link with looped end, Fe.
ON 2404 Bead, glass, green.

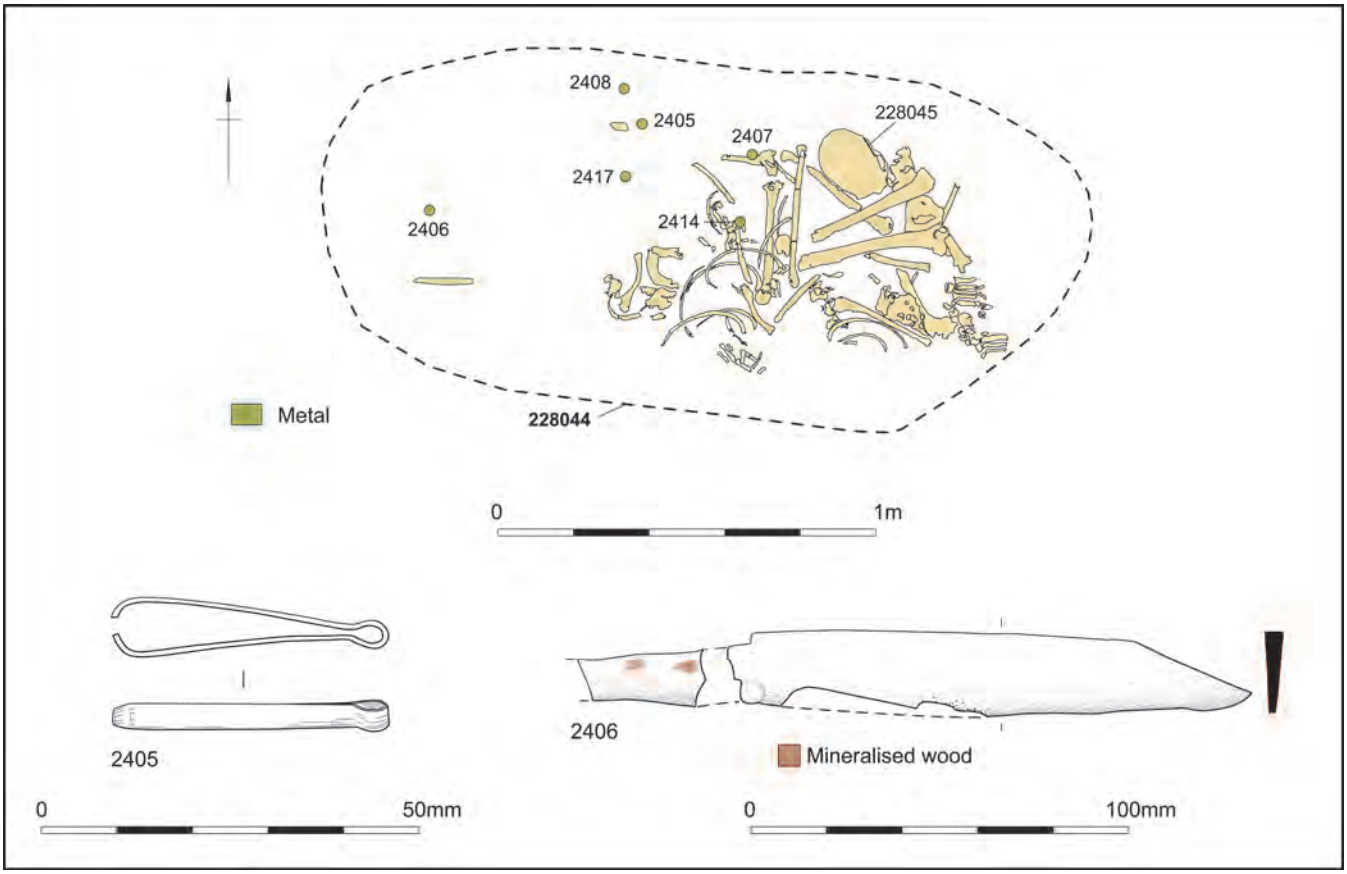


Fig 5.39 Plan of grave 228044 (Zone 19)

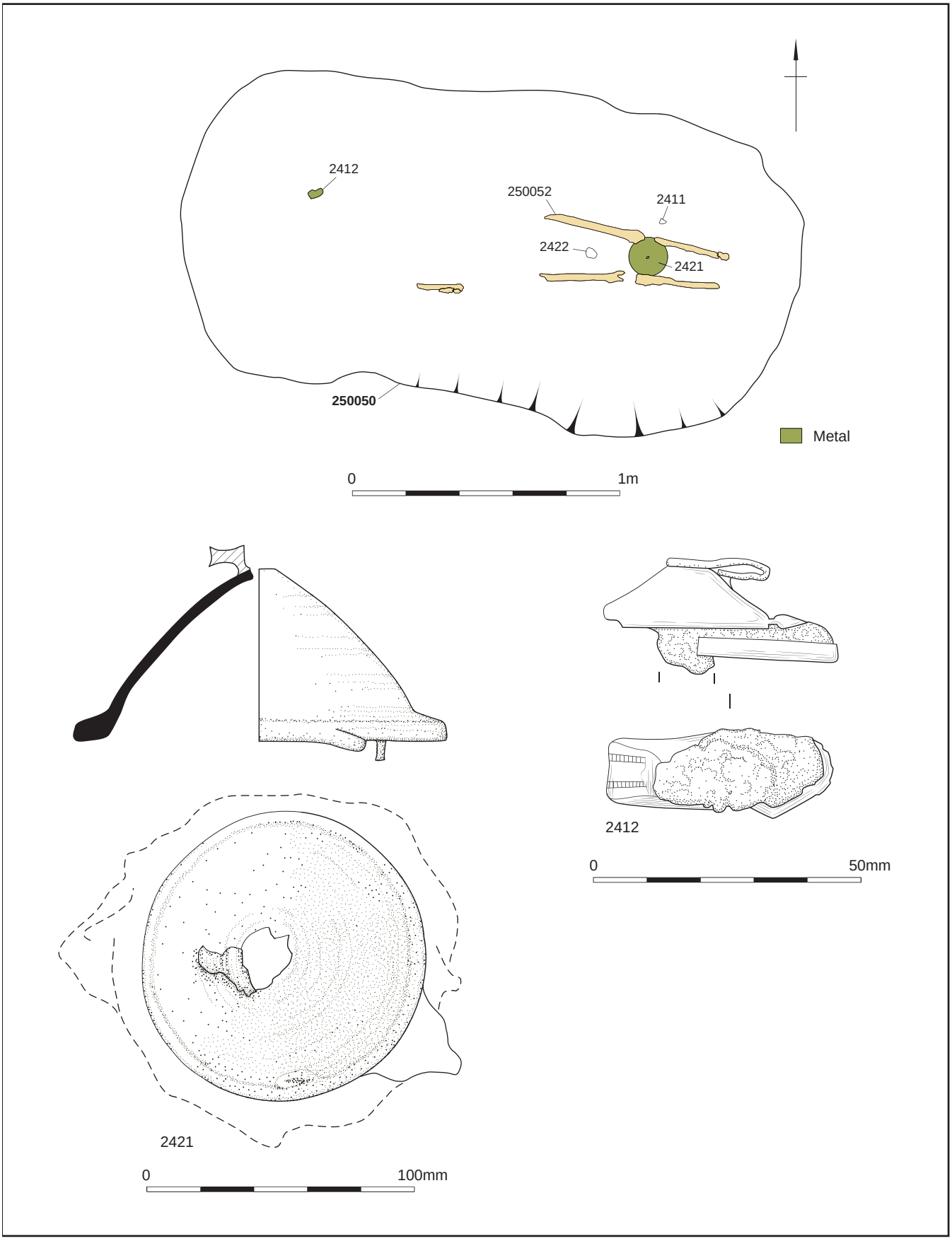


Fig 5.40 Plan of grave 250050 (Zone 19)

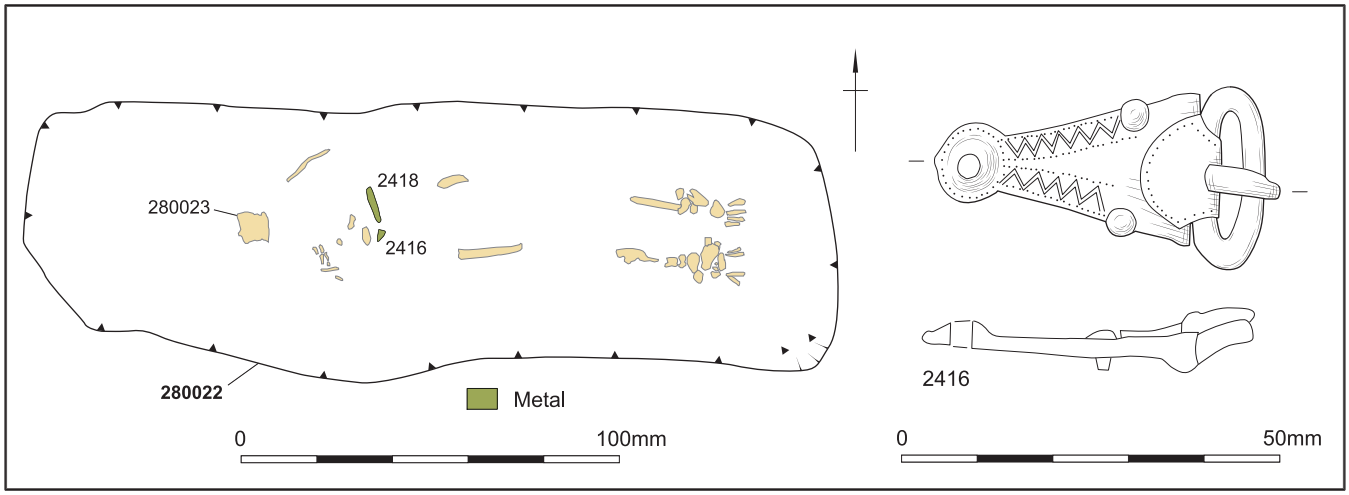


Fig 5.41 Plan of grave 280022 (Zone 19)

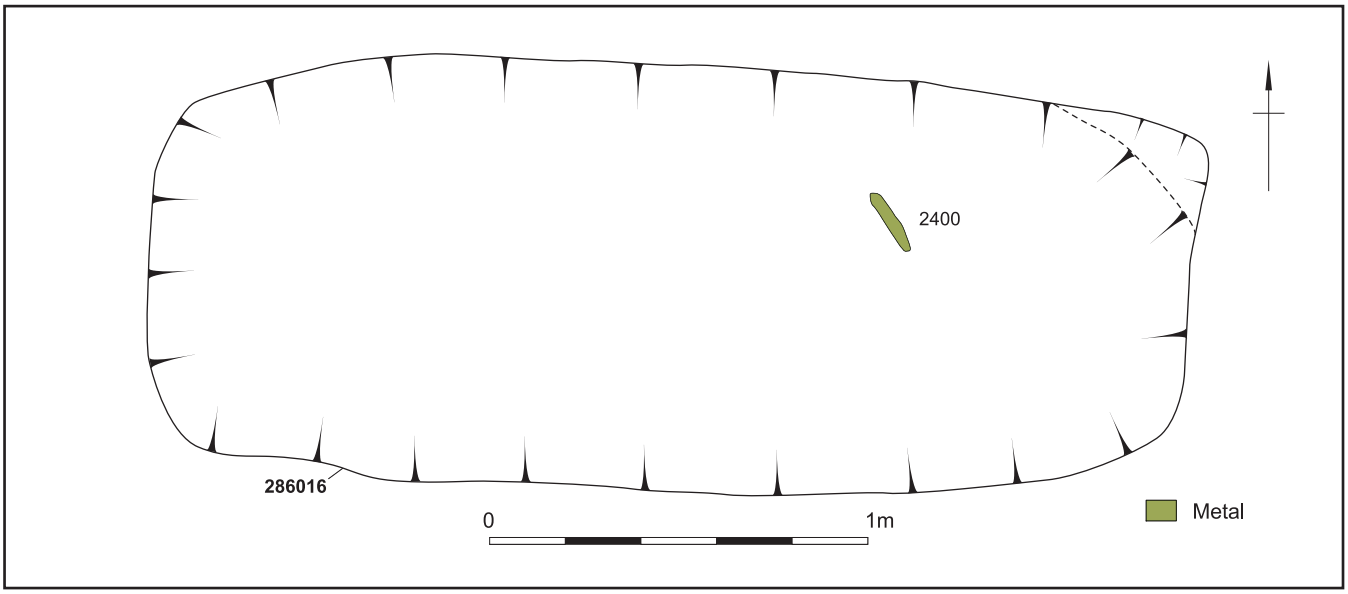


Fig 5.42 Plan of grave 286009 (Zone 19)

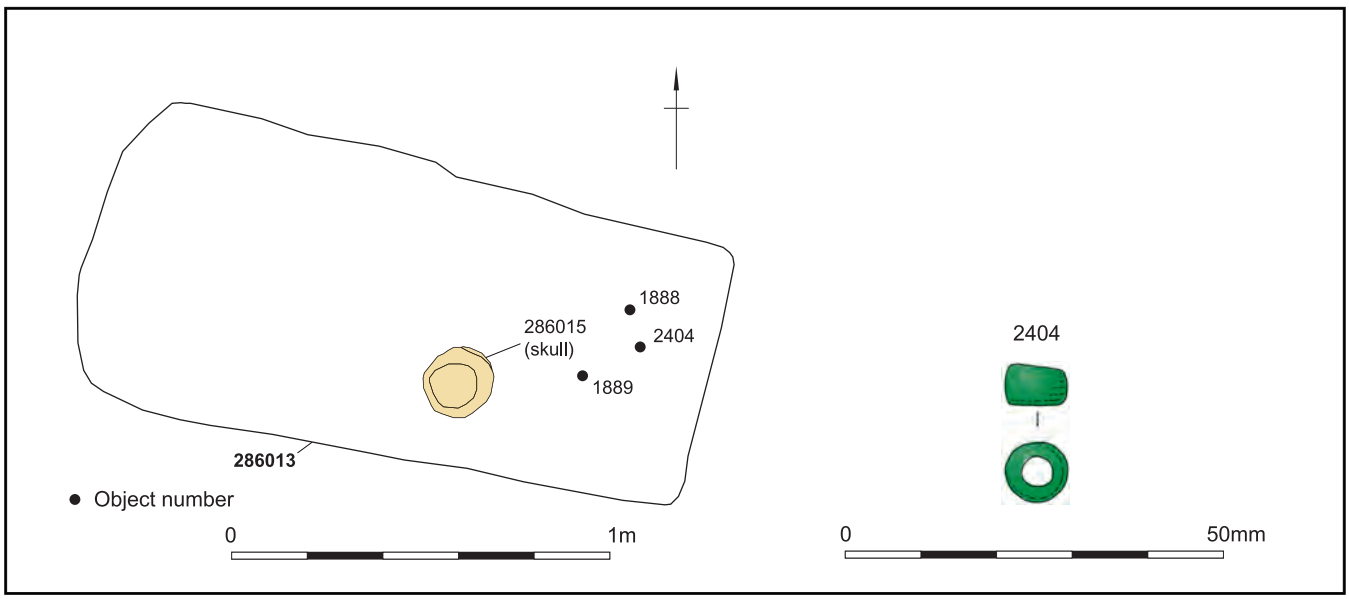


Fig 5.43 Plan of grave 286013 (Zone 19)

Zone 20

Western Cemetery 195116

A cluster of five broadly east–west aligned inhumation burials were revealed at the east end of Zone 20A, three of which cut the fill of Roman ditch 151055 (Fig 5.44). These burials lay approximately 500m west of the cemeteries in Zone 19, and other graves may exist to the south, beyond the limit of excavation. Recent geophysical survey in the field to the south has revealed part of a ring-ditch or small enclosure approximately 20m across, lying immediately to the south of the burials (Wardell Armstrong 2013), and perhaps the western cemetery was focused on this earlier monument or earthwork.

The graves were relatively deep, and in at least one case the body had been buried in a coffin. There was one grave that exhibited evidence of disturbance (217135), perhaps indicating grave robbing, and another that contained 'stacked' burials (252073). Where body position could be determined it was supine and extended.

Graves 252073 and 282014 each contained a spearhead, with the male in grave 252073 also accompanied by a knife and possibly two small iron buckles. The female in grave 252076 had a copper alloy buckle, the remains of a probable chatelaine, several possible box fittings, a spindle whorl and over 30 beads. Grave 267072 contained the most grave goods, with a silver scutiform pendant and fragments of silver binding, a copper alloy keystone disc brooch with applied silver rim, an annular brooch, a strap end, two knives, a possible chatelaine and approximately 240 beads – the majority glass and 18 of amber (see Pl 5.9). Grave 279036 also contained two brooches, one annular and the other a small long brooch, as well as a comb, knife and 18 beads.

Overall, the grave goods suggest a 6th-century date for this cemetery, or at least for the few graves uncovered, and a period of use beginning around the middle of the century can be advanced, possibly continuing into the very early 7th century. The small long brooch is earlier, of 5th–6th-century date, but the pin is missing and the object could be an heirloom, whereas the silver scutiform pendant may belong to the 7th century, in this case found alongside several objects which are broadly assigned to the first half of the 6th (eg, the disc brooch and the strap end).

Grave catalogue

Grave 252076 (Burials 252075 and 252079)

Fig 5.45, Pl 5.8

Grave: ESE–WNW, sub-rectangular with steep straight sides, stepped at top on north and south sides, flat base – 2.18 x 0.67m, 0.90m deep (base at 44.84m OD). Fill of brown silt with frequent gravel inclusions.

Human Remains: 252075 – Burial (upper) is supine and extended. *c* 30% skeletal recovery. Adult >55 yr. Male.

252079 – Burial (lower) is supine and extended. *c* 40% skeletal recovery. Adult *c* 25–35 yr. Female.

Grave Goods:

ON 2329 Bead, glass, blue.

ON 2330 Bead, glass, red with yellow decoration.

ONs 2331–2, 2335, 2486–9, 2491, 2493–5, 2497 Beads, amber.

ONs 2333, 2336, 2338, 2340–1 Beads, glass, bluey green.

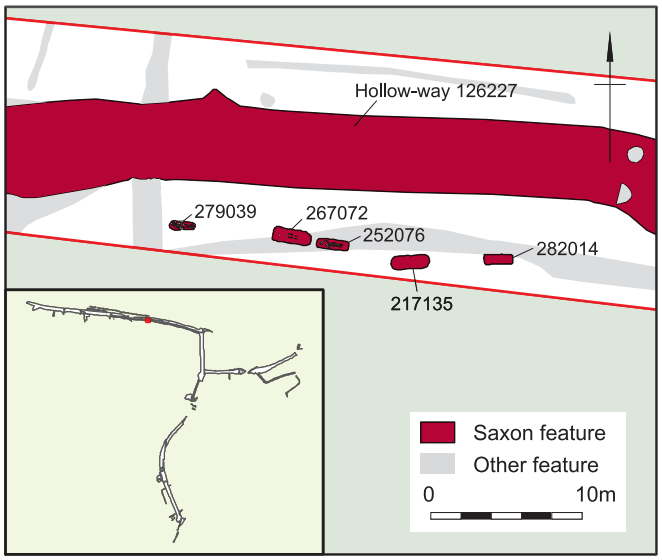


Fig 5.44 Plan of early Saxon cemetery 195116 (Zone 20)

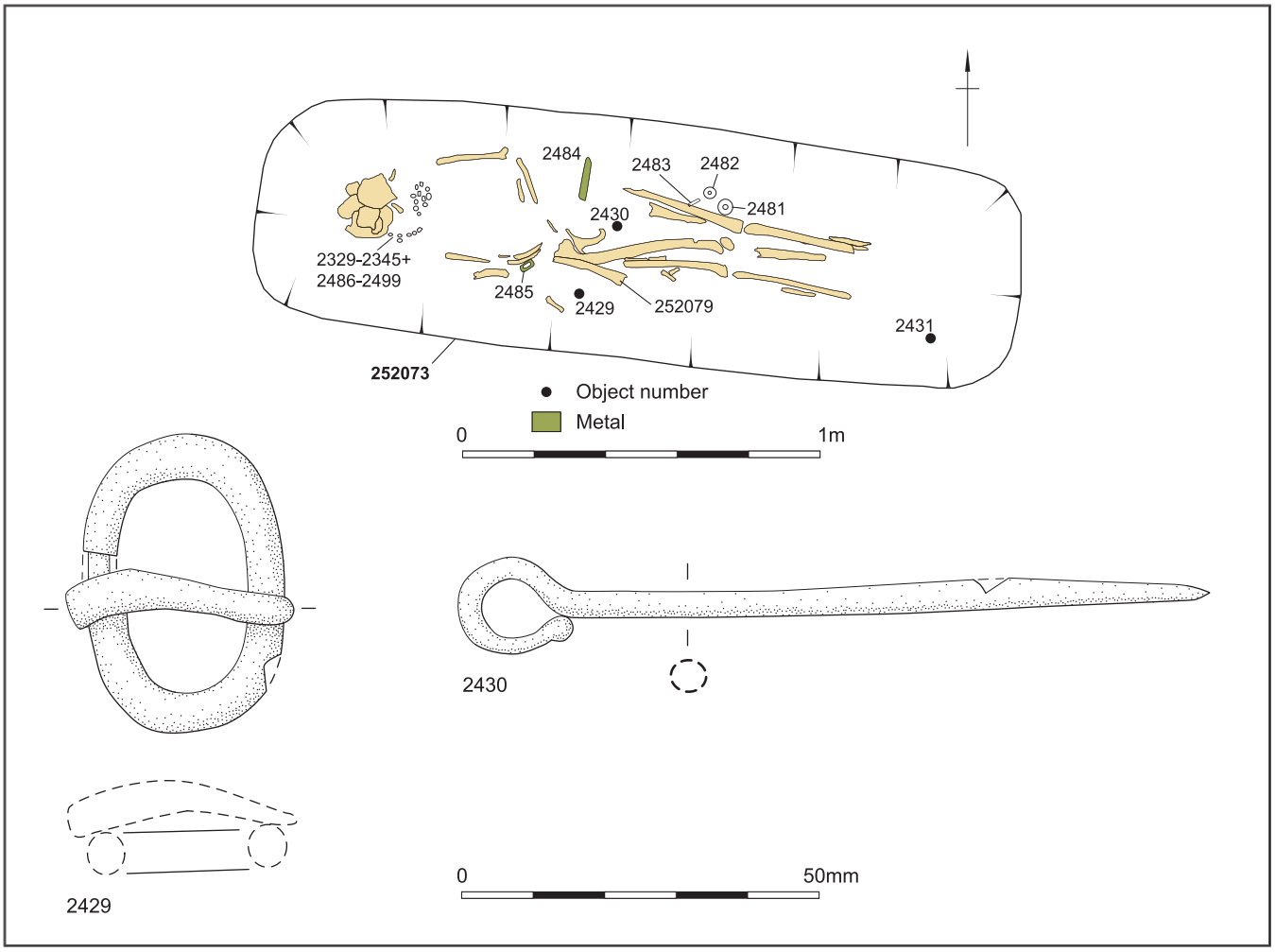


Fig 5.45 Plan of grave 252076 (Zone 20)

Pl 5.8 Stacked burial in grave 252076 a) lower burial (left), b) upper burial (above) (Zone 19; views from east and south)

ON 2334 Bead, amber, broken in half down length.
ON 2337 Bead, glass, pale yellow.
ON 2339 Bead, glass, blue with pale yellow decoration.
ON 2342 Bead, glass, red.
ON 2343 Bead, glass, brown.
ON 2344 Bead, glass, yellow.
ON 2345 Bead, glass, red, one edge broken.
ON 2429 Buckle, Fe, small oval buckle with tongue, poorly preserved.
ON 2430 Knife, Fe, whittle tang knife, incomplete blade of triangular section.
ON 2430bis Pin, Fe, with rolled over loop (3 fragments). Pin shank probably has a circular section. Encrusted. The rolled over loop has a rolled terminal.
ON 2431 Spearhead, Fe, with long angular blade. Most of the socket is missing. Foot of grave (252075), point to east.
ON 2431bis small clamps or staples (6 objects or fragments), Cu alloy. (1)–(2) 2 complete small clamps or staples. (3)–(4) 2 fragments of small clamps or staples; fragment (4) is tiny. (5) small clamp or staple. (6) small clamp or staple. Also small binding comprising 2 small curved strips joined by 3 rivets or pins. There is wood preserved between the strips. The grain runs across the gap.
ON 2481 Spindle whorl, fired clay, 2 concentric circles on upper surface.
ON 2482 Unidentified, glass, vessel base.
ON 2483 Rod, Fe, fragment of wire or pin.
ON 2484 Miscellaneous iron fragments and objects found together:
Oval, or D-shaped, buckle with tongue, Fe.
Circular buckle, with slight offset for attachment of strap.
Whittle tang knife with straight back, and concave curved edge. Incomplete blade.
Cranked bar, bar of rectangular section, with dog leg bend (2 fragments).
Curved object of uncertain function (2 fragments).
Curved fragment, possibly from a ring.
Curved strip, rectangular section.
Bar of square section with rolled over loop at one end. Possible nail shank fused to bar.
Ring or washer, possibly of square section.
Fragment undiagnostic.
2 plain rings. Found with bar below.
Bar fragment, found with plain rings.
Nails. 4 nail shank fragments and the head of an L-shaped nail.
ON 2485 Buckle, Cu alloy, D-shaped buckle frame.
ON 2490 Bead, glass, blue.
ON 2492 Bead, glass.
ON 2496 Bead, amber, broken on one edge.
ON 2498 Bead, glass, green.
ON 2499 Bead, glass, pale brown and yellow.

Grave 267072 (Burial 267071)
Figs 5.46–8, Pl 5.9
Grave: ESE–WNW, sub-rectangular with steep concave sides, flat base – 2.58 x 0.96m, 0.60m deep (base at 45.13m OD). Fill of dark brown silty loam with occasional chalk inclusions.
Human Remains: Burial is supine and extended, coffined. *c* 15% skeletal recovery. Adult *c* 25–35 yr. ?Female.
Grave Goods:
ONs 2289, 2315, 2318, 2347–8, 2353, 2356, 2359, 2361, 2366, 2374, 2376, 2382, 2385–6, 2530, 2532, 2538, 2546, 2549–50, 2552, 2566, 2569, 2571, 2590–1, 2596, 2598, 3000, 3003, 3009, 3011, 3016, 3018, 3025, 3039, 3047, 3051, 3054, 3056, 3062, 3066, 3069, 3073, 3081–2, 3091, 3093, 3097, 4753–4 Beads, glass, yellow.
ONs 2313, 2444–2447, 2459–2463, 2500–2518, 2520–2521, 2523–2524, 2526–2528. Probable girdle links formed from square section Cu alloy wire with loops at each end. There are fragments with single end loops, eg ON 2445, probably ON 2446, ON 2447, ON 2500 and ON 2501. ON 2444, ON 2502, ON 2506 and ON 2518 are examples of fragments with linked end loops. Many of the fragments are small and comprise just pieces of square section wire. ON 2313 is the longest extant link and comprises 2 joining fragments but no end loops. ON 2509 and ON 2526 are 2 of the longest fragments and each has a single end loop. ON 2447 and ON 2506 are good examples of end loops.
ON 2314 Bead, glass, two beads, larger yellow bead and smaller red bead.
ONs 2316–7, 2346, 2349, 2352, 2357–8, 2363–4, 2368–70, 2372–3, 2378, 2381, 2387–8, 2397, 2539, 2541, 2544, 2548, 2553, 2555, 2561, 2564–5, 2567, 2575, 2578, 2582–3, 2588, 2592, 2595, 3002, 3007, 3031, 3045–6, 3049, 3052–3, 3058, 3068, 3072, 3074–6, 3080, 3084, 3087, 3090, 3098–9, 4755 Beads, glass, red.
ON 2319 Bead, glass, white.
ON 2320 Object formed from folded and rolled strip, Cu alloy.
ON 2321 Bead, glass, red with yellow and off-white decoration.
ON 2322, 2551, 2559 Beads, glass, red with pale yellow decoration.
ON 2323, 2350, 2375, 2394, 3014, 3060, 3067 Beads, glass, pale greeny white.
ON 2351 Bead, glass, pale blueish white.
ON 2354 Bead, glass, blue and yellow swirl pattern.
ONs 2355, 2367, 2371, 2380, 2391, 2545, 2579–80, 2584, 2586–7, 3015, 3030, 3032, 3034, 3078 Beads amber.
ONs 2360, 2389, 2396, 2398, 2529, 2536, 2543, 2547, 2556–7, 2562, 2572–74, 2581, 2585, 3005–6, 3008, 3013, 3017, 3022, 3038, 3057, 3065, 3083, 3088 Beads, glass, blue.
ON 2362 Bead, glass, pale greeny yellow.
ON 2365 Bead, glass, greeny yellow.
ON 2377 Bead, glass, red with yellow decoration.
ON 2379 Bead, glass, yellow with blue swirl decoration.
ON 2383, 2542 Bead, glass, pale yellow.
ONs 2384, 2390, 3020–1, 3023, 3027–8, 3033, 3035, 3048, 3050, 3055, 3063–4, 3070, 3077 Beads, glass, brown.
ON 2392 Bead, amber, fragmented into two pieces.
ON 2393 Bead, glass, fragmented into two pieces, blue.
ON 2395 Unidentified.
ON 2399, 2594, 2599, 3085 Beads, glass, green.
ON 2438 Knife, Fe, 3 fragments, whittle tang knife with parallel sided blade.
ON 2439 Knife, Fe, in 2 fragments whittle tang knife with curved edge and angled back.
ON 2440 and ON 2312 Silver U-section binding with U clips (11 fragments). ON 2440: (1) U-section binding with a neatly folded corner and riveted U clips. L: 41mm; Th of binding: *c* 4mm. (2)–(4) 3 lengths of U-binding: L: 27mm; 21mm; 11mm. (5)–(8) 4 small silver fragments. ON 2312: (9)–(10) 2 small fragments of U-shaped channel: L: 11mm & 12mm; (11) U-shaped clip with rivet and fragment of U-shaped channel.
ON 2441 Ring, Cu alloy, possible lift key bit, fused to Cu alloy ring ON 2442.
ON 2442 Ring, Cu alloy, of circular section, wear on inside at one point on circumference.
ON 2443 2 Fe rods, attached to a fragment of iron ring. Possibly remains of a chatelaine. Fused to Cu alloy ring (ON 2443) and may join to ON 2441.
ON 2443bis Ring, with possible traces of wear on inner face. Cu alloy.
ON 2450 Annular brooch of flat oval section. There are 4

internal lugs with small holes.
ON 2452. Small tongue-shaped strap end, Cu alloy, decorated with 3 ring-and-dot motifs.
ON 2453 Keystone disc brooch with applied silver rim. Cu alloy and Ag, with garnet and enamel. D: 34mm.
ON 2519 Tiny cast fragment with small flanges. Uncertain function. Cu alloy.
ON 2522 2 undiagnostic fragments, Fe.
ON 2525 Wire fragment. Fe.
ON 2533, 3004 Beads, glass, red with off-white decoration.
ONs 2534, 2558, 2560, 2577, 3010, 3036 Beads, glass, red with yellow swirl decoration.
ONs 2535, 3001 Beads, glass, pale green.
ONs 2537, 2540, 2554 Beads, glass, pale greeny white.

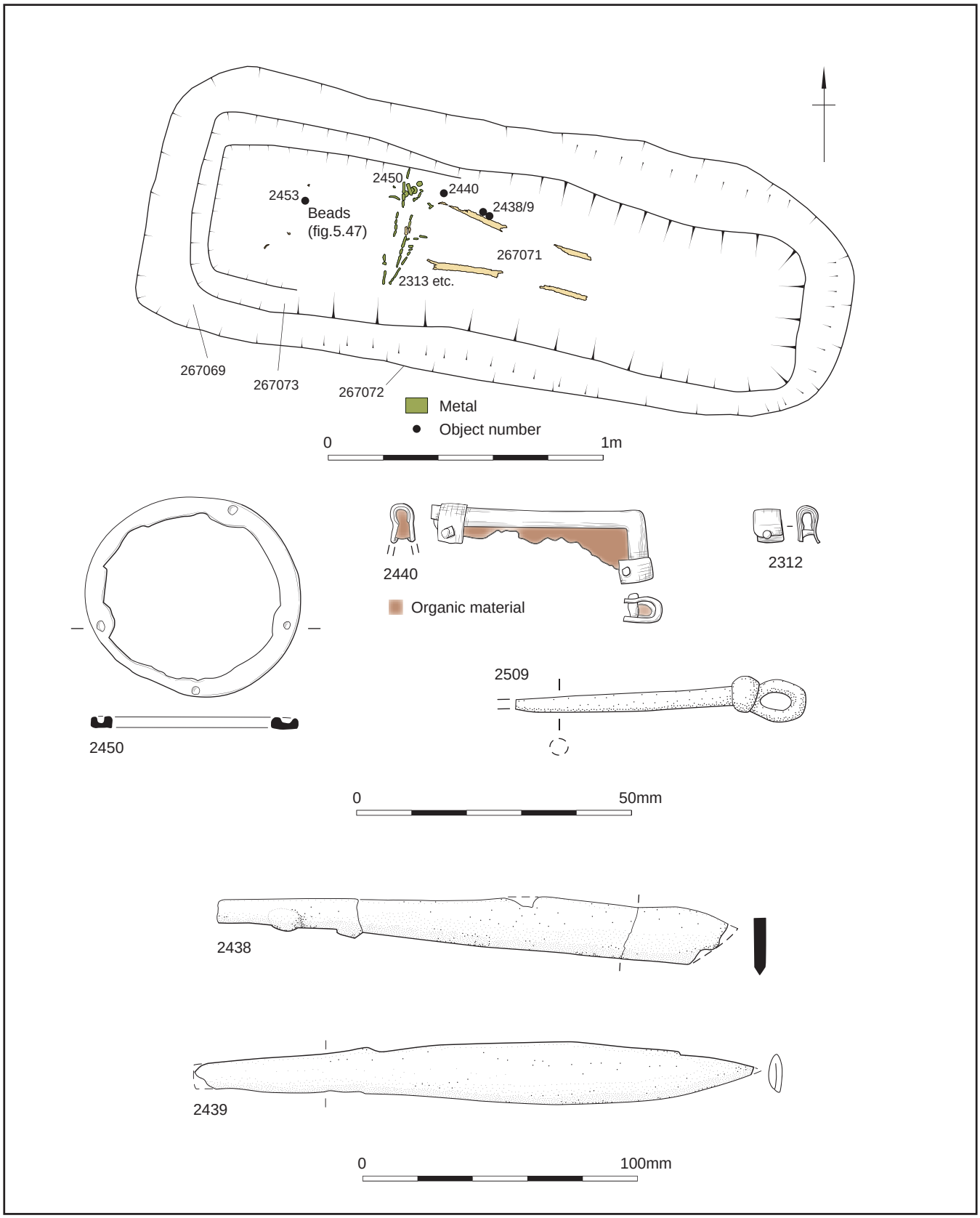


Fig 5.46 Plan of grave 267072 (Zone 20)

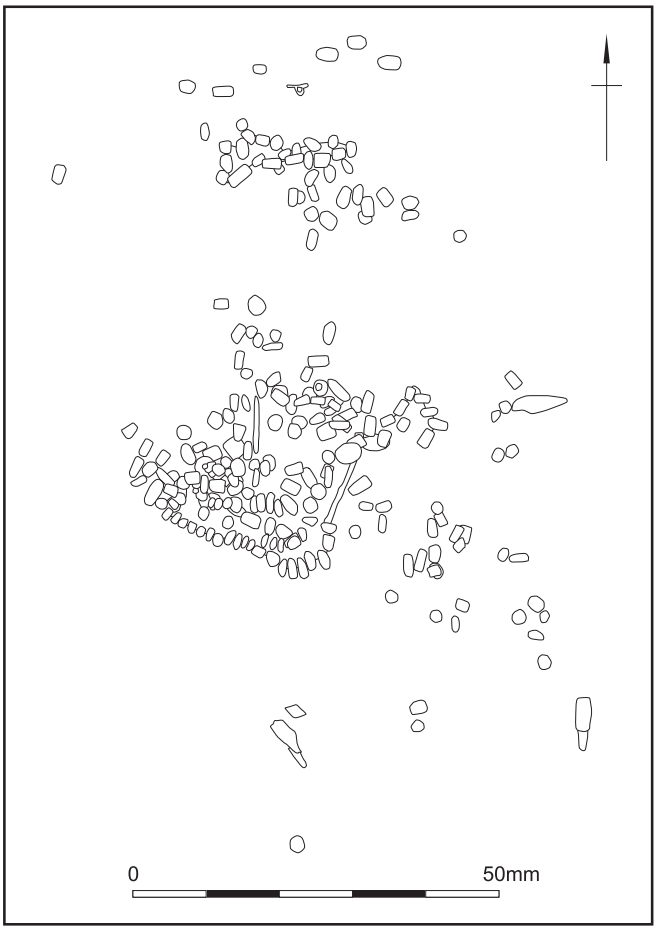


Fig 5.47 Grave 267072 – location of beads (Zone 20)

ON 2563 Bead, rock crystal.
ON 2575 Bead, glass, red with a yellow hue.
ON 2593 Bead, glass, green and yellow.
ON 3012 Bead, glass, reddy brown.
ON 3019 Bead, amber, fragmented into 2 pieces.
ON 3024, 3061 Beads, glass, black.
ON 3026 Bead, glass, black and brown.
ON 3029, 3096 Beads, gypsum, fragmentary.
ON 3037 Bead, gypsum, very fragmentary.
ON 3040 Bead, glass, red with metallic green hue.
ONs 3059, 3071 Bead, glass, pale yellowy white.
ON 3079 Bead, glass, white with red decoration.
ON 3086 Bead, glass, red and off-white.
ON 3089, 3092 Bead, glass, blue, fragmented.

Pl 5.9 (right) Bead group in grave 267072 (Zone 20)

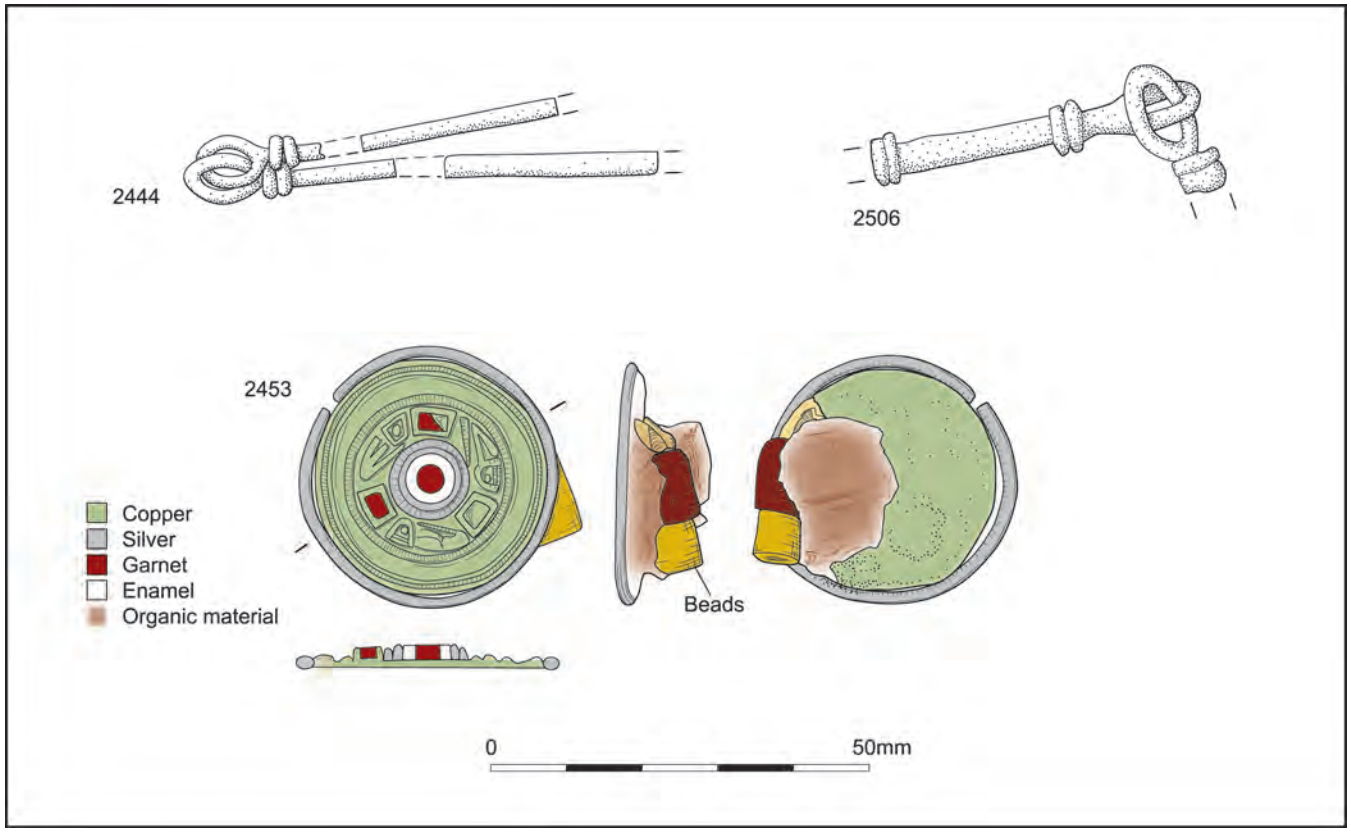


Fig 5.48 Grave 267072 – grave goods (Zone 20)

ON 4717 Bead, glass, red with white decoration.
Small circular scutiform pendant. Central boss with border of small raised dots, and four further dots around central boss. Incomplete. Ag. D: 15mm. Soil sample 7497.
2 fragments of wire, one curved. Fe. Soil sample 7493.

Grave 279039 (Burial 279037)
Fig 5.49
Grave: E–W, sub-rectangular with steep straight sides, flat base – 1.75 x 0.52m, 0.20m deep (base at 45.55m OD). Fill of mid-yellow brown silty clay loam occasional gravel inclusions.

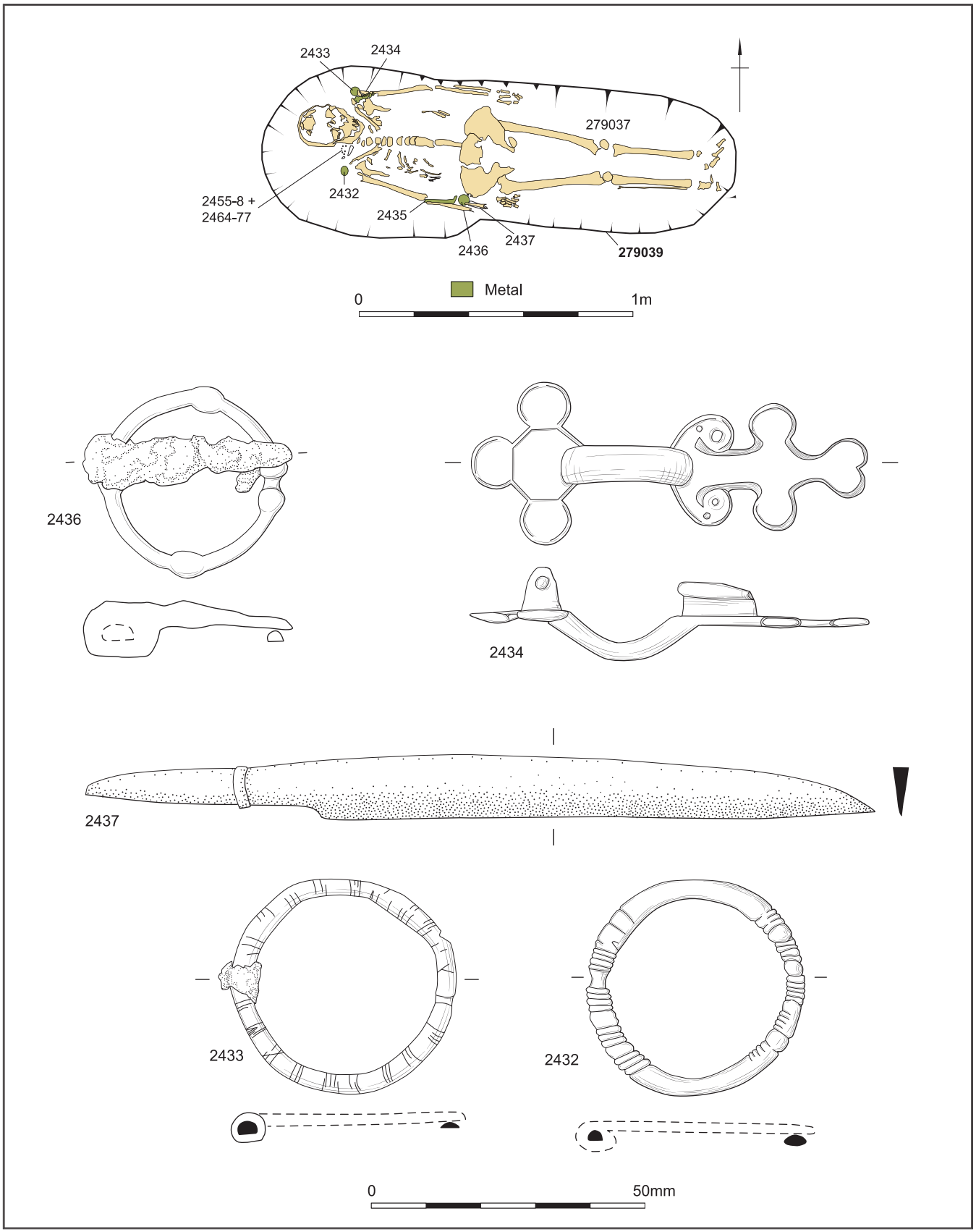


Fig 5.49 Plan of grave 279039 (Zone 20)

Human Remains: Burial is supine and extended, probable gap of 0.1m between head and west end of grave. *c* 85% skeletal recovery. Adult *c* 45–55 yr. Female.
Grave Goods:
ON 2432 Buckle or brooch, Cu alloy. Annular buckle or brooch of plano-convex section with panels of transverse ribs alternating with plain sections; fragment of iron pin.
ON 2433 Buckle or brooch, Cu alloy. Annular buckle or brooch of plano-convex section with panels of transverse ribs alternating with plain sections; no pin. Forms a pair with ON 2432.
ON 2434 Brooch, Cu alloy, small long brooch.
ON 2435 Comb, animal bone, very fragmentary, possibly double sided.
ON 2436 Brooch, Cu alloy, annular brooch with hoop of plano-convex section with plain bosses and iron pin.
ON 2437 Knife, Fe, whittle tang knife with long narrow blade with straight back and triangular section (2 fragments).
ON 2455 Bead, glass, green/blue.
ONs 2456, 2458, 2464, 2466–8, 2470–1, 2473–6 Beads, glass.
ONs 2465, 2469, 2472, 2477 Beads, amber.
ON 4667 Bead, glass, very degraded, ?dark green coloured.
ON 7446 3 small fragments of wire, Fe.

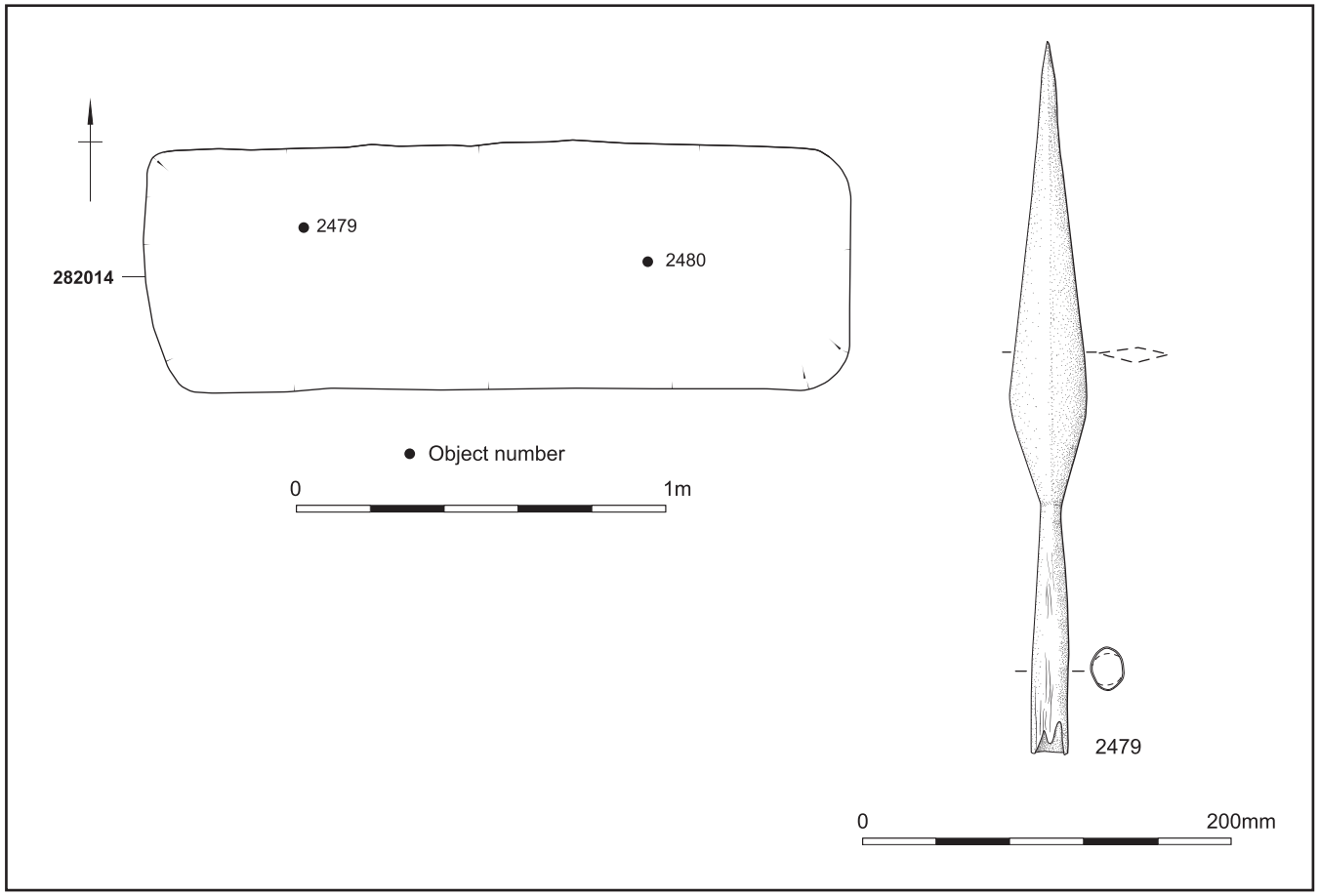


Fig 5.50 Plan of grave 282014 (Zone 20)

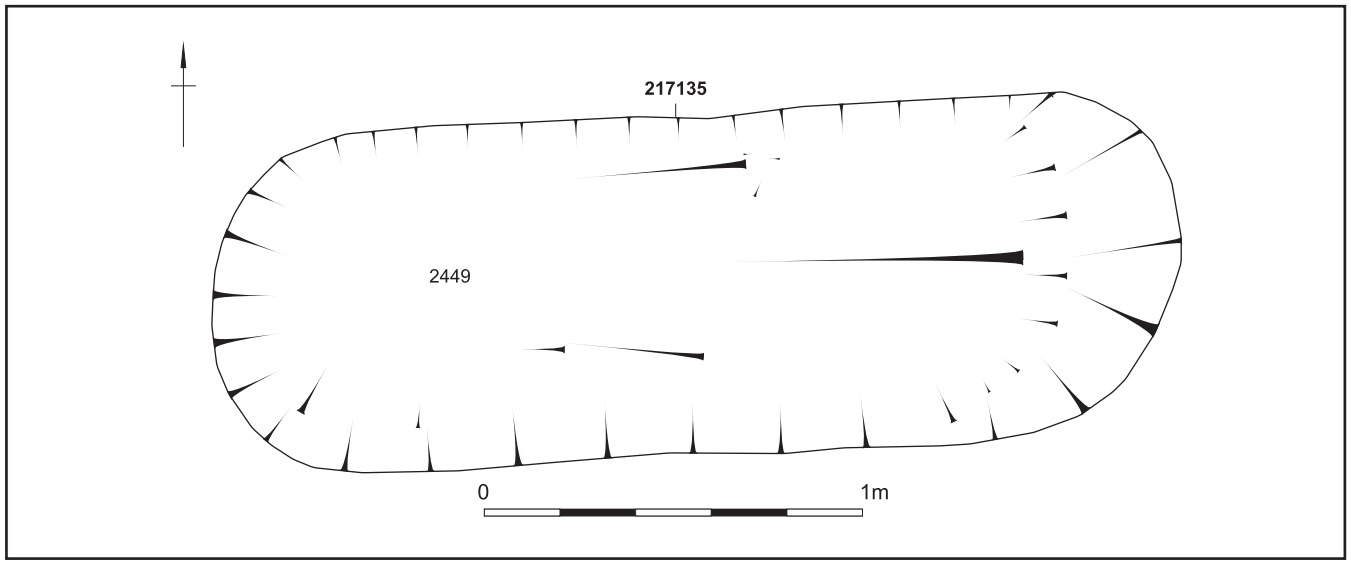


Fig 5.51 Plan of grave 217135 (Zone 20)

Grave 282014 (Burial 282016)
Fig 5.50
Grave: E–W, sub-rectangular with steep straight sides, flat base – 1.93 x 0.66m, 0.72m deep (base at 44.86m OD). Fill of dark brownish grey sandy silt.
Human Remains: Only 4 fragments present.
Grave Goods:
ON 2479 Spearhead, Fe, large leaf-shaped blade and long split socket.
ON 2480 Ferrule or socket Fe.
ON 4621 Nail shank fragment, Fe.
ON 4673 Nail head, flat, circular, Fe.

Grave 217135 (Burial 217136)
Fig 5.51
Grave: E–W, sub-rectangular with steep straight sides, flat base – 2.55 x 0.9m, 0.79m deep (base at 44.88m OD). Fill of mid-grey brown silt, occasional gravel and chalk inclusions.
Human Remains: Burial heavily disturbed and redeposited – a few fragments including ?longbone subadult/adult >13 yr.
Grave Goods:
ON 2449 Possible strap end or binding, Fe. Single nail hole.

Mid- to late Saxon

Zones 14 and 15
Features have been attributed to this phase on the basis of a relatively small quantity of datable material recovered from them (including mid-Saxon Ipswich Ware pottery), three radiocarbon dates (all on burials), as well as stratigraphic relationships (Figs 5.52–56). They include an inhumation cemetery of 24 burials and various groups of pits. The features are clustered in the central region (cemetery and pit groups) and eastern region (pits) (Pl 5.10). The burials were close together in the centre of the zone, so despite the absence of any trace of a contemporary enclosure, it is clear that the whole cemetery had been found.

Cemetery
The cemetery comprised 24 graves orientated east–west, all but one (that was empty) containing the poorly-preserved remains of inhumations interred in an extended supine position (where position could be determined) with the head to the west (Pl 5.11). The graves overlay the eastern, curving ditches of the D-shaped Late Bronze Age enclosure/Early Iron Age enclosure (11 graves cut the ditches), and the distribution of these and other Anglo-Saxon features suggests that elements of the later Iron Age–Roman rectangular enclosure may still have been visible at the time the cemetery was in use, most probably in the first half of the 8th century. With the exception of two graves (176043 and 166032) which are 4m to the west, the graves are tightly clustered, with three rows apparent, covering an area of approximately 10 x 10m. Three graves were dated by radiocarbon: 176043 to 650–780 cal AD (1315±30 BP, SUERC-40306); 176055 and 223031 both to 660–780 cal AD (1300±30 BP, SUERC-40307 and 1285±30 BP, SUERC-40308 respectively).

Each grave was spatially distinct from its neighbours, with the exception of 126057, which cut through earlier grave 126061, perhaps suggesting that most graves were marked in some way. Disarticulated bone in the fill of 126057 is likely to have been redeposited from grave

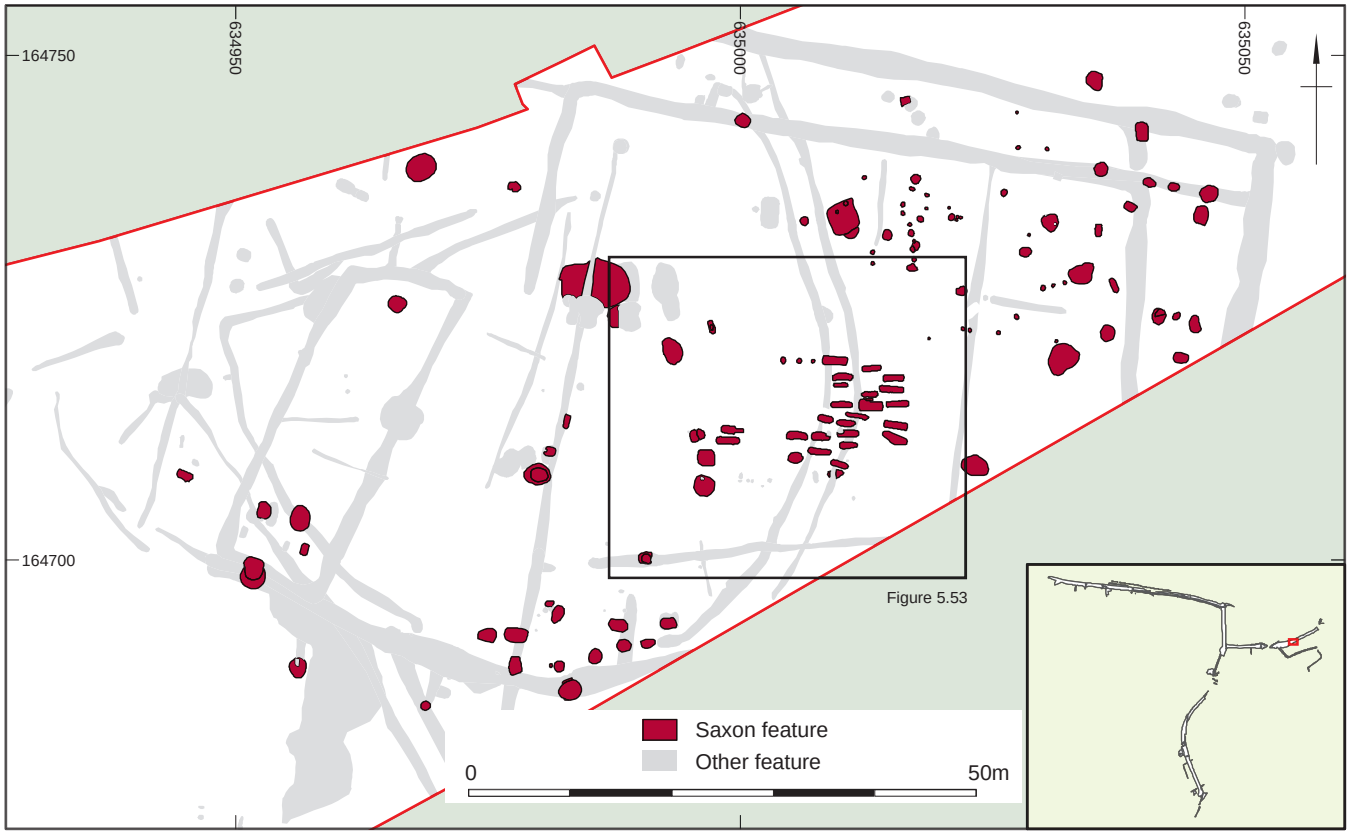


Fig 5.52 Plan of mid-Saxon features and cemetery in Zone 14

126061, rather than deriving from a second body buried within 126057 (Pl 5.12). Grave 166041 (immediately north of 126061/126057) contained no human remains, and may have been a cenotaph. Details of the graves and their contents are presented in the Grave catalogue.

There was considerable variation in the dimensions of the graves. Excluding partially-destroyed grave 126061, lengths ranged from 1.57m to 2.63m (126045 and 136085 respectively) with an average of 2.29m, and widths from 0.52m (223004) to 1.05m (126057) with an average of 0.74m. The surviving depths of the graves averaged 0.27m, with a minimum of 0.06m (136059 and 136085) and a maximum of 0.32m (166032); four graves survived to less than 0.10m in depth and six to more than 0.20m.

Pl 5.10 Work in progress on mid-Saxon settlement and cemetery in Zone 14 (view from west)

Pl 5.11 Graves 166032 left and 126030 right under excavation (Zone 14; view from east)

Apart from some animal bone, burnt and worked flint and a few very small sherds of Iron Age and Roman pottery incorporated in the backfills, the only objects associated with the burials were an iron knife from grave 136059 and 10 iron objects (most or all nails) from 223033 (Pl 5.13). The location, layout and paucity of finds allows a late 7th- or 8th-century date to be proposed for this small cemetery, consistent with the three radiocarbon dates (see above), and this would suggest different chronological foci for activity in the immediately surrounding area. At Cliffs End Farm to the south-west, for example, an inhumation cemetery was of early 6th- to late 7th-century date (McKinley *et al* forthcoming).

Grave catalogue

All graves in this group are rectangular or sub-rectangular, relatively shallow with steeply sloping or near-vertical sides, and aligned approximately east-west (see Fig 5.53). All

Pl 5.12 Grave 126057 (Zone 14; view from south)

Pl 5.13 Grave 223033 (Zone 14; view from north)

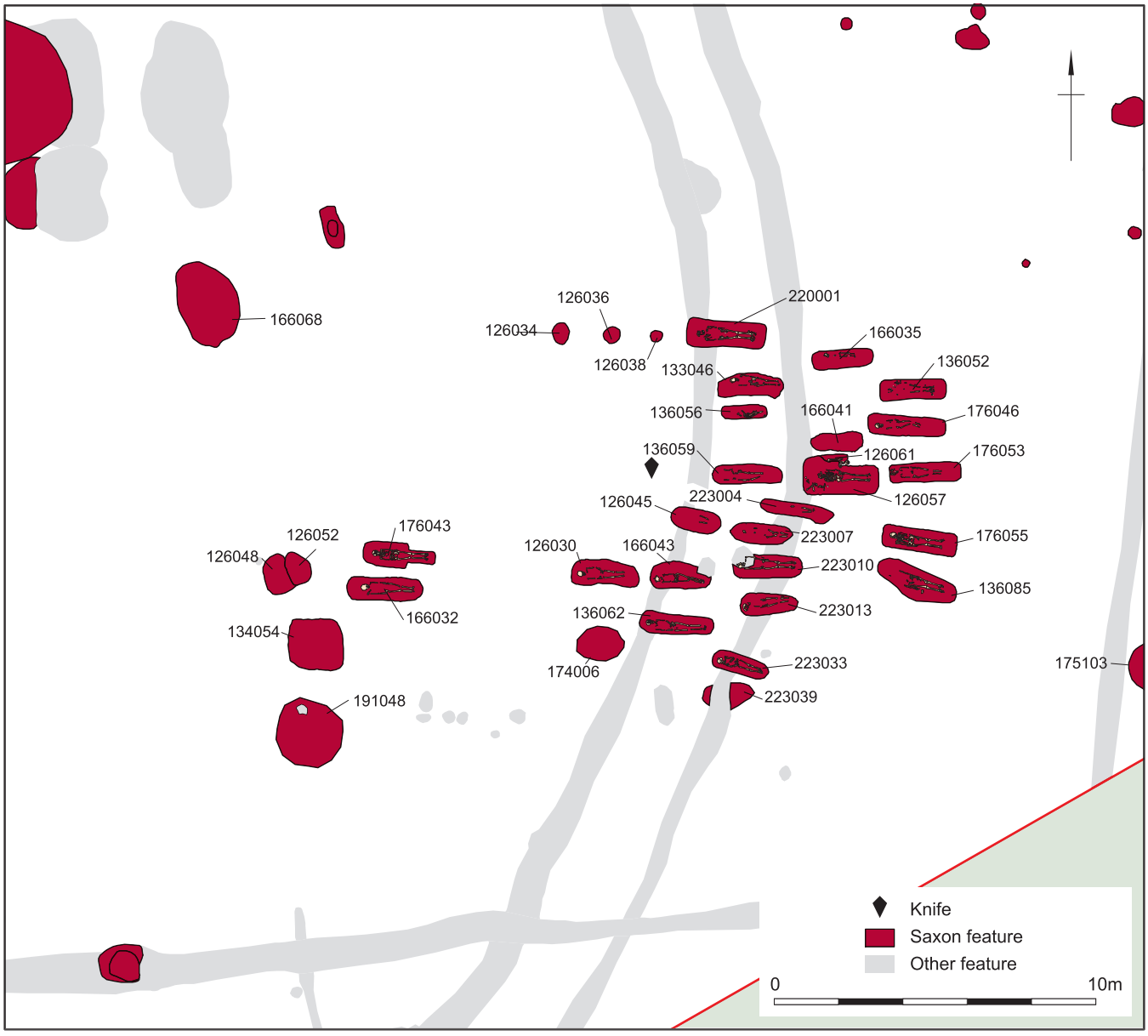


Fig 5.53 Plan of mid-Saxon cemetery (Zone 14)

skeletons, with the exception of 223009a, which was prone, were supine with the head to the west.

Grave 126030 (Burial 126031)
Pl 5.11
Grave: Sub-rectangular – 2.10 x 0.74m, 0.20m deep. Fill of mottled grey brown silty clay loam with very occasional flint inclusions.
Human Remains: c 50% recovery. Adult >35 yr. Male.

Grave 126045 (Burial 126046)
Grave: Sub-rectangular – 1.57 x 0.72m, 0.12m deep. Mid-grey brown silty clay loam fill.
Human Remains: two shafts and scraps of skull and lower limb. Juvenile *c* 5–12 yr.

Grave 126057 (Burial 126058)
Pl 5.12
Grave: Sub-rectangular – 2.35 x 1.05m, 0.07m deep. Light grey brown silty clay loam fill with occasional flint inclusions.
Human Remains: c 75% recovery. Adult >40 yr. Female.

Grave 126061 (Burial 126060)
Grave: Sub-rectangular – 0.96 x 0.20m, 0.03m deep. Light grey brown silty clay loam fill. Cut by grave 126057.
Human Remains: c 30% recovery. Adult >23 yr. ?Male.

Grave 133046 (Burial 133045)
Grave: Sub-rectangular – 2.09 x 0.72m, 0.17m deep. Mid-red-brown silty clay loam fill with occasional flint inclusions.
Human Remains: c 50% recovery. Adult >45 yr. Female.

Grave 136052 (Burial 136051)
Grave: Sub-rectangular – 2.05 x 0.64m, 0.21m deep. Mid-greyish brown sandy silt loam fill with occasional flint inclusions and charcoal flecks.
Human Remains: c 30% recovery. Adult *c* 18–30 yr.

Grave 136056 (Burial 136057)
Grave: No discernible cut.
Human Remains: c 10% recovery. Adult >30 yr. ?Male.

Grave 136059 (Burial 136060)
Grave: Sub-rectangular – 2.21 x 0.61m, 0.06m deep. Mid-greyish brown sandy clay loam fill with occasional flint inclusions and charcoal flecks.
Human Remains: c 25% recovery. Adult >18 yr.
Grave Goods
ON 557 Iron knife, incomplete, in 2 pieces, triangular cross-section, tip/point is missing.

Grave 136062 (Burial 136063)
Grave: Sub-rectangular – 2.29 x 0.60m, 0.11m deep. Mid-greyish brown sandy clay loam fill with occasional flint inclusions and charcoal flecks.
Human Remains: c 45% recovery. Adult >30 yr. Male.

Grave 136085 (Burial 136086)
Grave: Sub-rectangular – 2.63 x 0.91m, 0.06m deep. Mid-greyish brown sandy silt loam fill with occasional flint inclusions.
Human Remains: c 40% recovery. Adult >45 yr. Male.

Grave 166032 (Burial 166033)
Pl 5.11
Grave: Sub-rectangular – 2.35 x 0.75m, 0.32m deep. Mid-brown silty clay fill with sparse flint and chalk inclusions.
Human Remains: c 45% recovery. Adult *c* 20–30 yr. Male.

Grave 166035 (Burial 166036)
Grave: Sub-rectangular – 1.91 x 0.95m, 0.23m deep. Pale grey brown silty clay fill with sparse flint inclusions.
Human Remains: c 20% recovery. Juvenile *c* 8–10yr.

Grave 166043 (Burial 166044)
Grave: Sub-rectangular – 1.92 x 0.86m, 0.12m deep. Single pale grey brown silt fill with sparse flint inclusions.
Human Remains: c 55% recovery. Adult >50 yr. Female.

Grave 176043 (Burial 176044)
Grave: Sub-rectangular – 2.25 x 0.42m, 0.25m deep; western 3/5ths widen to 0.82m in the upper half. Mid-grey brown silty loam fill with occasional shell and frequent flint inclusions.
Human Remains: c 80% recovery. Adult *c* 25–35 yr. Male.

Grave 176046 (Burial 176047)
Grave: Sub-rectangular – 2.41 x 0.65m, 0.24m deep. Mid-grey-brown silty loam fill with occasional charcoal flecks.
Human Remains: c 38% recovery. Adult >30 yr. Female.

Grave 176053 (Burial 176052)
Grave: Sub-rectangular – 2.20 x 0.60m, 0.13m deep. Mid-grey-brown silty loam fill with occasional charcoal flecks.
Human Remains: c 35% recovery. Adult >45 yr. Female.

Grave 176055 (Burial 176056)
Grave: Sub-rectangular – 2.35 x 0.71m, 0.18m deep. Mid-grey-brown silty loam fill.
Human Remains: c 80% recovery. Adult *c* 40–50 yr. Female.

Grave 220001 (Burial 220002)
Grave: Sub-rectangular – 2.25 x 0.42m, 0.25m deep; western 3/5ths widen to 0.82m in the upper half. Mid-grey brown silty loam fill with occasional shell and frequent flint inclusions.
Human Remains: c 45% recovery. Subadult *c* 15–17 yr. Male.

Grave 223004 (Burial 223006)
Grave: Sub-rectangular – 1.60 x 0.52m, 0.10m deep. Mid-brown sandy silt loam fill with sparse flint inclusions.
Human Remains: c 8% recovery. Adult >18 yr. ?Male.

Grave 223007 (Burial 223009a & b)
Grave: Sub-rectangular – 2.00 x 0.64m, 0.11m deep. Mid-brown sandy silt loam fill with frequent small to medium flint inclusions and sparse chalk flecks.
Human Remains: a: *c* 15% recovery. Adult >18 yr.
b: Two teeth and one axial fragment. Infant *c* 1.5–3 yr. Redeposited.

Grave 223010 (Burial 223012)
Grave: Sub-rectangular – 2.25 x 0.80m, 0.15m deep. Mid-brown sandy silt loam fill with frequent small to medium flints and chalk flecks.
Human Remains: c 70% recovery. Adult *c* 20–30 yr. Male.

Grave 223013 (Burial 223015)
Grave: Sub-rectangular – 1.85 x 0.75m, 0.20m deep. Mid-brown sandy silt loam fill with frequent small to medium flint and chalk flecks.
Human Remains: c 32% recovery. Adult >35 yr.

Grave 223033 (Burial 223031)
Pl 5.13
Grave: Sub-rectangular – 1.80 x 0.60m, 0.16m deep. Mid-orange brown sandy silt loam fill with sparse small flints.
Human Remains: c 60% recovery. Adult *c* 25–35 yr. ? Female.

Grave Goods:
ON 590–1 Iron rod/shanks – square cross-section tapering to one end, slightly bent at mid-shaft, badly corroded, possible nail.
ON 592 Iron rod/shank – ?nail, possibly rectangular cross-section tapering to one end, bent at right angle mid-shaft, heavily corroded. Width/thickness measurements taken mid-shaft.
ON 593 Iron nail – triangular cross-section, possibly flat head, slightly bent, no obvious tapering as distal end missing, badly corroded.
ON 594 Iron rod/shank – ?nail, square cross-section tapering to one end, slightly bent at distal end, badly corroded.
ON 595 Iron rod/shank – ?nail, square cross-section tapering to one end, distal tip absent, slight corkscrew bend at mid-shaft, badly corroded.
ON 596 Iron rod/shank – square cross-section tapering to one end, straight, no obvious nail head present, badly corroded.
ON 597 Flat headed large nail fragment, possibly rectangular cross-section but level of corrosion obscures true cross-section, head is approx 30mm diameter. Heavily corroded.
ON 598 Iron rod/shank – possible nail shaft.
ON 599 Iron rod/shank – probable nail shank possibly rectangular cross-section, tapers towards one end, bent at right angles, badly encrusted with corrosion product.

Pits

Western area

The cemetery lay in an area relatively free of other contemporary features, with large scatters of pits and postholes approximately 10m to the north, west and east. The only features that seem likely to have been associated in some way with the cemetery is a line of three small, shallow pits or postholes (126034, 126036 and 126038) approximately aligned on grave 22001, all without finds and undated, and possibly a line of five larger pits (191048, 134054, 126052 cutting 126048, and 166068) which may mark the western boundary (Fig 5.53). These larger pits contained generally small amounts of material including two sherds of pottery and an iron knife, from pit 166068, and some fired clay. However, pit 166068 also produced 5.5kg of shell and 1.7kg of animal bone, whilst pits 134054 and 191048 produced 2.3 and 2.2kg of shell respectively. This suggests that they lay close to a settlement, or at least an 'activity area' of some sort, though the precise chronological relationship of these and the other pits to the cemetery cannot be ascertained.

A little further to the west and south-west of the cemetery, 34 pits formed a diffuse group (Figs 5.53–4). These pits were generally oval in plan and bowl-shaped in profile, most 1–2m in diameter but rarely more than 1m deep. The fill sequences were generally simple, often homogenous, sometimes with notable deposits of shell, but otherwise seeming to have largely silted up naturally. The majority contained relatively limited quantities of marine shell and animal bone, with only occasional pot sherds (pit 175088 had 18 sherds, as well as fragments of a comb), metal objects (including iron knives in 202151 and 264021), fragments of fired clay and stone, much of it unworked sandstone but also a few pieces of lava quern stone; a glass bead came from pit 126040. The exceptions to this general pattern included shallow pit 277004, which produced 3.2kg of shell and 1.1kg of animal bone, and pits 202100 and 202128. Pit 202100 contained 12.5kg of fired clay and just over 1kg of unworked stone, and 202128 contained over 167g of fired clay, along with 14 sherds of pottery and 1.3kg of animal bone. Both pits 202100 and 202128 also contained notable quantities of well-preserved charred barley, perhaps providing evidence for crop drying, with the fired clay in both pits probably deriving from associated, albeit temporary crop dryers. In most other pits, marine shell of a variety of species was the most frequently occurring material, with four pits on the north-east side (134054, 166068, 191048 and 277004, Fig 5.54) together producing over 13kg of shell, suggesting that these pits were associated with the disposal of waste from the preparation of this food (Pl 5.14).

Pl 5.14 Pit 134054, with typical marine shell deposits (Zone 14; view from south-east)

North and east of the cemetery, 21 pits clustered around a pair of slab-lined hearths, with a further six pits to the west (Fig 5.55). The two hearths (173050/1 and 191119) were broad (1.92 by 1.25m and 1.74m by 0.96m respectively) and shallow (0.18m and 0.17m respectively), lined with greenish-grey sandstone slabs and (in the former) flint nodules and a reused quern fragment (Pl 5.15). Of the hearth in 191119 only the basal stone survived; in 173051 stone slabs had been

Pl 5.15 Hearth 173050 (Zone 14; view from east)

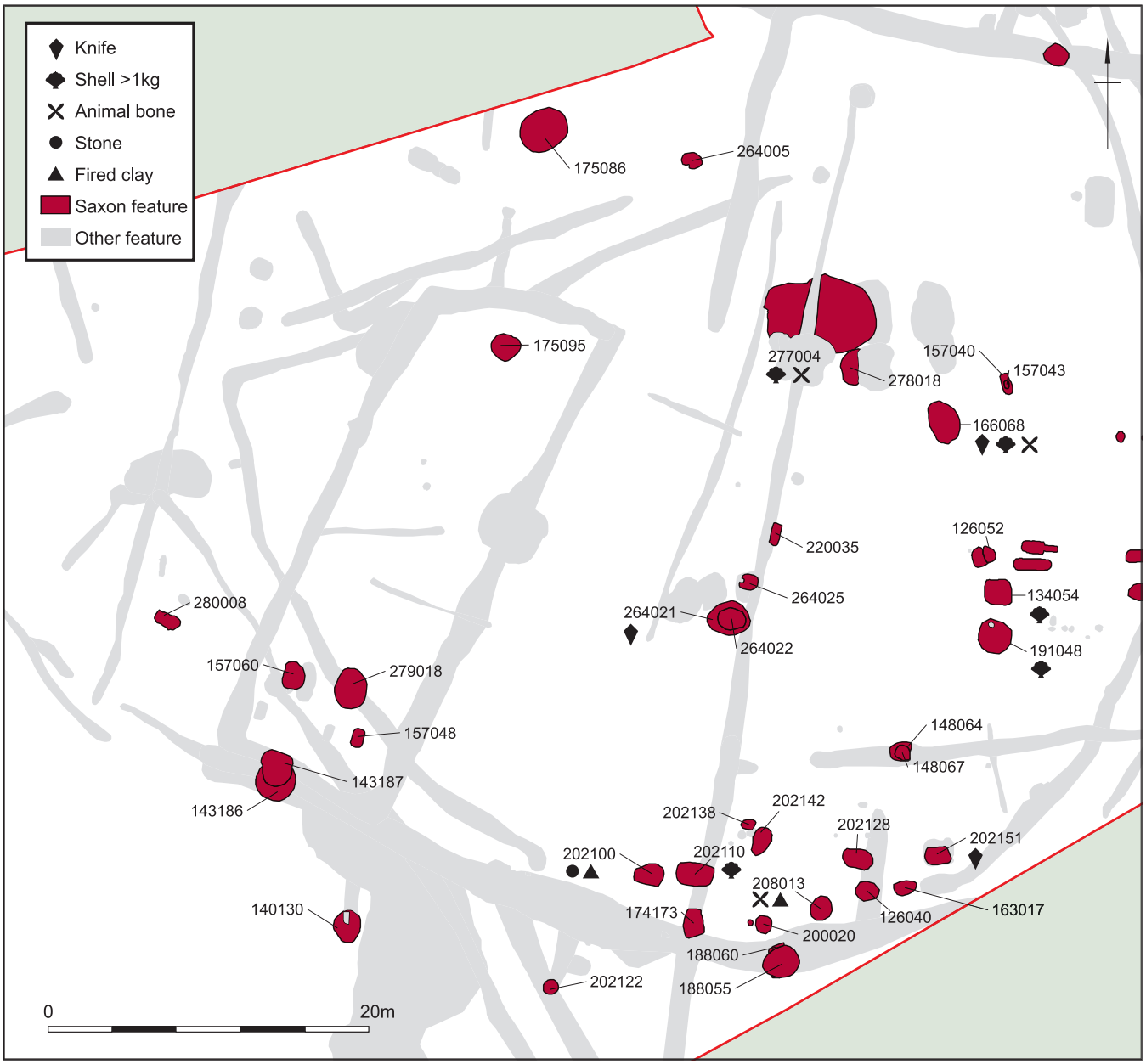


Fig 5.54 Plan of mid-Saxon features, south-west group (Zone 14)

roughly laid to form a floor, with stones on edge forming the sides. Signs of *in situ* burning were few, though some of the stones in 173051 were discoloured, as was the lowest fill of 191119 (beneath the hearth stone), indicating a low intensity of heat. It can be noted that a moderate number of unworked but sometimes slightly burnt sandstone slabs and smaller fragments were recovered from the subsoil in this area, and a particularly large group of slabs and other relatively large pieces were recovered from one of the pits (167081) to the south.

The pits in this area were not very securely dated, with only three (175103, 182127 and 185008) containing mid-Saxon pottery, but only 10 sherds in total. Other contents indicating a broadly contemporary date were limited to a copper alloy hooked tag with ring-and-dot decoration in pit 202021.

Several of the pits surrounding the hearths contained large quantities of marine shell (202021 – 8kg; 139054 – 3.9kg; 182127 – 2.1kg; 240037 – 2.5kg), of a variety of species (oyster, whelk, spindle, limpet, mussel and periwinkle), suggesting that the hearths may have been associated with the cooking of shellfish, perhaps seasonal preparation for pickling or smoking (see Vol 2, Nicholson, Chap 16). The uppermost fills of the relatively large ditches on the north and east sides of the Roman enclosure also contained large quantities of marine shell of various species (along with some animal bone), and it is thought that this material represents the remnants of what was formerly a more extensive spread of mid-Saxon shellfish processing debris. In addition to the pits, the upper fills of Roman ditch 159224, the inner enclosure ditch, contained 42.1kg of shell and 6kg of animal bone, as well as six sherds of mid-Saxon pottery (Pl 5.16), whilst outer ditch 159219 contained 31.6kg of shell, 2.7kg of animal bone, approximately 3kg of stone and nine sherds of pottery. Other notable concentrations of finds comprised 7.4kg of fired clay

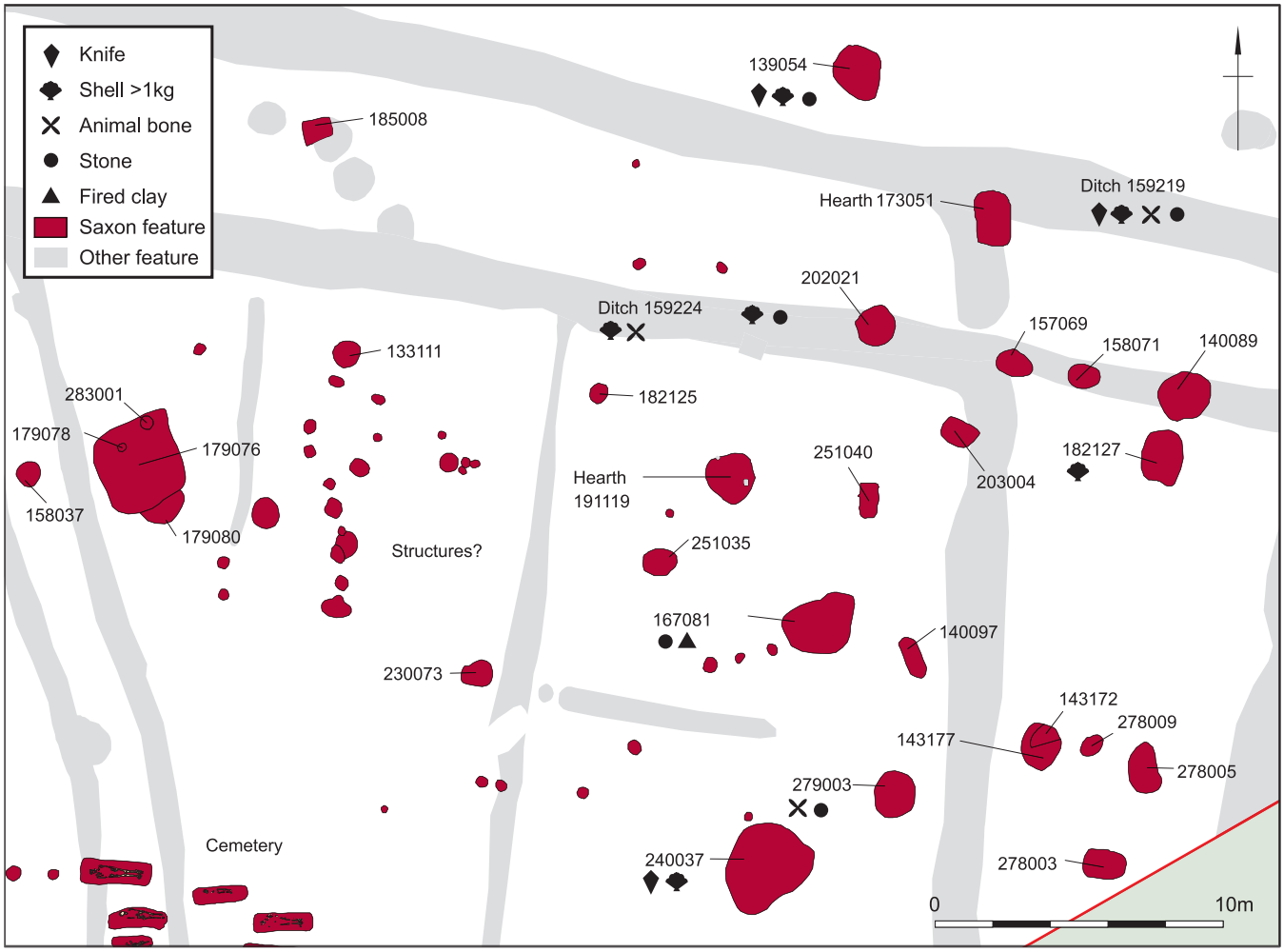


Fig 5.55 Plan of mid-Saxon features, north-east group (Zone 14)

and 2.1kg of stone from pit 167081, 1.3kg of stone from 202021 and 1.3kg of stone, 1.9kg of animal bone and an iron handle from a bucket from 279003. Lines of pits, several also containing concentrations of marine shell, particularly oyster, were found at Cliffs End Farm approximately 500m to the south-west, where they have been assigned a 7th–8th-century date, probably broadly contemporary with the activity in Zone 14 (McKinley *et al* forthcoming).

South and west of hearths 173051 and 191119 were numerous small, largely undated features some of which were perhaps the bases of very truncated postholes (post-pipes were visible in two of approximately 35 examples). It should be noted that small negative features in this area, as well as to the east, were only visible at a higher level within the overlying subsoil if they contained moderate amounts of shell, particularly oyster shell, and many have almost certainly been truncated by as much as 0.15m during machining. If these features were postholes then they are likely to have marked the lines of fences rather than the walls of buildings or other more substantial structures. However, no coherent alignments or groups were identified. The apparent absence of structural remains, along with the general paucity of Anglo-Saxon pottery and other material (for example, a spindle whorl from hearth 191119 and a loomweight from pit 203004), might suggest that the area was one given over to craft activities, specifically shellfish processing, rather than to settlement.

Pl 5.16 Ditch 159224, with typical marine shell deposits in upper fill (Zone 14; view from east)

Eastern area

A third concentration of 48 pits lay at the eastern extremity of the zone on the slightly higher ground on the west side of Hollins Bottom dry valley (Fig 5.56). Like the pits in the groups further to the south-west, many of these were oval and some sub-circular, but there were more sub-rectangular examples. Also, overall, the pits in this group to the east were smaller than those

to the west, with most less than 1m across and very few exceeding 1.5m, whilst none was more than 1m deep. Most of the pits contained relatively simple, sometimes homogeneous fill sequences, with deposits of shellfish remains often being the most distinguishing characteristic. Twenty-five of these pits could be assigned to the mid-Saxon period on the basis of their contents (more than half contained pottery, albeit in very small quantities), and it is likely that many of the undated examples are contemporary, as the only features belonging to a different chronological horizon are two Roman pits. The pits covered an area of approximately 80m by at least 35m and appear to cluster in three main groups, to the north-east, in the centre and to the south-west. The latter is the most dispersed group, but here and in the other two groups there are some pits that appear to follow alignments. It seems most likely that this eastern concentration of pits marks the location of a small settlement, although no structural remains were identified; it is possible that postholes and shallow gullies have been completely truncated by ploughing in this area.

Finds from these pits include small quantities of pottery of mid-Saxon date (including some Ipswich Ware) with 18 sherds from pit 202038, the remainder producing five sherds or fewer. There is a limited range and number of other finds, but there is a single sherd of imported reticella glass, highly decorated and probably from a bowl, recovered from pit 202046. Iron objects comprise six knives (two from pit 133048 and one each from 139090, 173079, 173094 and 176049), two shears blades (173112 and 174117), a girdle hanger (176064) and at least one clapper from a small bell (139075). In addition to a small quantity of lava quern stone there are three whetstones (from pits 133058, 173093 and 176069, that from 173093 relatively substantial), contrasting with the pits to the west which produced none. It is noteworthy that the small amount of iron smithing slag from Zone 14 (2.5kg) all came from this concentration of pits, four producing less than 0.5kg of debris (159336, 176049, 203030, 220006) and just under 1kg coming from pit 176064. Fired clay was generally sparse, but 2.2kg came from pit 176064. Like the pits to the west, several contained notable concentrations of unworked sandstone. The largest quantities came from six pits in the group to the north-west, which together produced approximately 24kg of stone, almost 9kg coming from 202042. Only two other pits produced more than a kilogram of stone, 4.7kg from 139090 and 4.6kg from 176069, both to the south-west.

Marine shell is especially well-represented, and present in most of the pits, dated or otherwise. However, the quantities are smaller than in the features to the west, with only six pits containing more than a kilogram, most (4.2kg) coming from 203024. All but one of these pits lay in the central group, but there were no associated hearths. It might be surmised, however, that the unworked stone either came from such hearths or was destined for use in their construction. Animal bone occurred in small quantities in many pits, but only 133058 with 2.5kg produced more than a kilogramme.

The pits have been interpreted as rubbish pits, with the presence of small quantities of fish bone in some

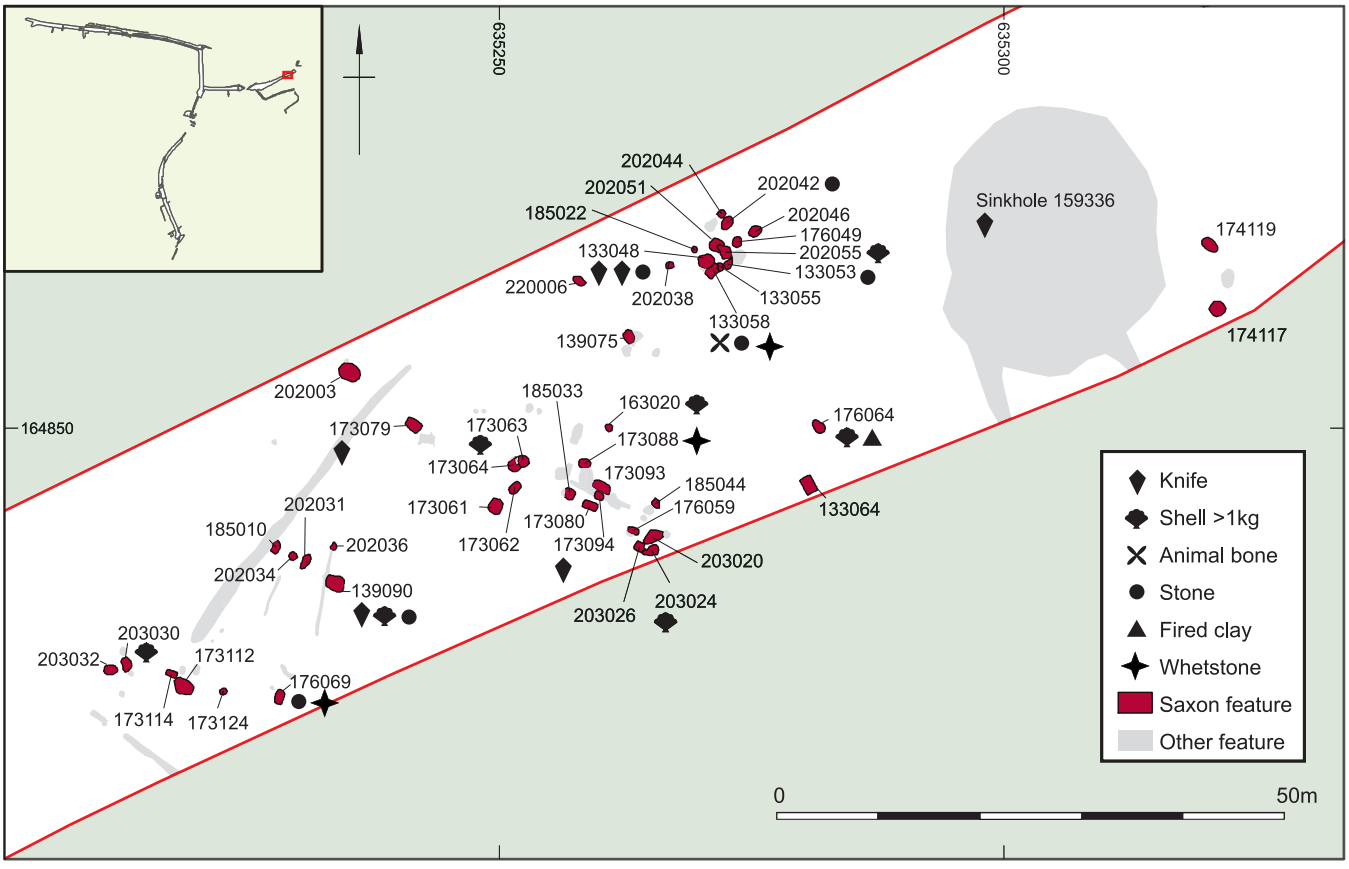


Fig 5.56 Plan of mid-Saxon features, east group (Zones 14 and 15)

perhaps indicating cess disposal, though no mineralised plant remains were recorded, and there were no clear capping or sealing layers, either of brickearth or as is sometimes represented by deposits of charcoal. These pits may have been contemporary with the other significant focus of Anglo-Saxon activity within Zone 14, approximately 250m to the west, the pits in this case apparently associated with the shellfish processing activity and coeval with the use of the cemetery.

Four pits (174117, 174119, 203009 and 203011) at the west end of Zone 15, adjacent to the sinkhole in Zone 14, are likely to mark the eastern extremity of that settlement. Most contained marine shell, and pit 174117 also produced an iron tool. A fifth pit (133068) was undated but likely to be contemporary.

Anglo-Saxon material also came from the fills of what is likely to have been a large natural sinkhole (159336) at the eastern end of Zone 14. This feature was oval, its long axis broadly north–south, and measured approximately 26m by 21m at the surface; two small ditches or natural channels appear to have drained into it from the south. The depth of 159336 was not ascertained, but a section was initially hand-excavated and subsequently reduced by machine to a maximum depth of 2.8m. The sides sloped irregularly and at 2.8m the natural chalk was exposed across much of the base, though the feature continued down at one end. The fill was generally homogeneous and from the upper part came eight sherds of Anglo-Saxon pottery, animal bone and small quantities of other finds including marine shell and iron slag, all of which had probably accumulated in what was probably a large, shallow hollow at this time.

Zones 17 and 18

Two rubbish pits (143037 and 147029, see Fig 6.12) situated in the centre of Zone 17 contained pottery of late Saxon date and may be related to settlement activity outside the footprint of the road scheme. Pit 143037 was sub-rectangular in shape, with steep straight sides and a flat base. It measured 1.62m in length, 1.27m in width and 0.7m in depth. The two fills contained 30 sherds of late Saxon pottery (AD 975–1050). Four pieces of tile from the upper fill, one of which was a floor tile of medieval date were probably deposited during the final stages of infill. Small amounts of shell and animal bone were also recovered from the fills.

Pit 155014 was sub-circular in shape with a shallow concave profile. It measured 1.3m in length, 0.6m in width and 0.25m in depth. Its single fill contained two sherds of late Saxon pottery (AD 975–1050) and a small amount of animal bone.

Discussion

Kent has a pre-eminent place nationally in studies of the earlier Anglo-Saxon period (eg, Hawkes 1982; Brookes 2007a; Welch 2007; Brookes and Harrington 2010; Reynolds 2011), and the EKA2 excavations have contributed substantially in furthering our knowledge of Anglo-Saxon Thanet, particularly in the mid-Saxon period (*c* AD 650–850), where the discoveries are of regional significance. The principal remains comprise two or more cemeteries, together probably spanning the mid-6th–8th centuries, but – and perhaps more important in a local context – there is also evidence for at least two phases of settlement, of early–mid- and mid-Saxon date respectively, the latter example associated with an adjacent cemetery and with extensive evidence for shellfish processing. There was, until recently, very little archaeological evidence for settlement during these periods on Thanet, and indeed more generally in Kent, in contrast to the large number of Anglo-Saxon cemeteries which are known or have been excavated in the east of the county as well as on Thanet itself.

Early to mid-Saxon

Excavated remains of late Roman settlement on the EKA2 were largely restricted to a cluster of sunken-featured buildings and associated features in Zone 20, the final phase in a long sequence of occupation in Zone 6 – represented by a scatter of enclosure or field boundary ditches, pits, wells and at least one sunken-featured building – and various other ditches mainly confined to the lower parts of the route. However, what happened in Thanet after the last regular troops left Richborough *c* AD 407–11 is unclear, and the results from the EKA2 have not helped to clarify this, with no features or finds certainly attributable to the 5th century. Nevertheless, rural agricultural communities presumably survived and continued to farm on a small scale across the island. The tradition of Thanet, and specifically the Ebbsfleet Peninsula, as the landing place of the probably mythical Hengest and Horsa recorded *s.a.* 449 by the Anglo-Saxon Chronicle, to assist the Britons in their fight against the Picts, remains no more than speculation (Hawkes 1982). It is not until the 6th century that more tangible evidence for settlement becomes apparent, particularly through the appearance of richly-furnished cemeteries in East Kent, which contrast with those in West Kent, west of the River Medway. This division reflects an early administrative boundary, as from the middle of the 5th century the early medieval kingdom of Kent seems to have comprised only the people to the east of the Medway, though East Kent appears to have absorbed or annexed West Kent during the 6th century (Brookes and Harrington 2010, 10 and 65). By the end of the 6th century Kent was emerging as a major political force, and St Augustine's mission in 597 marked a significant moment which would eventually lead to the Church becoming a major landowner and a dominant factor in Kentish society.

Settlement

Four Anglo-Saxon sunken-featured buildings were recorded on the EKA2, three in the central part of Zone 11, on the south-facing slope below the chalk ridge, and one at the southern end of Zone 10, close to its lowest point and just before the ground starts to rise to the south to Cottington Hill (see Fig 5.61).

The dispersed group of three buildings in Zone 11 may have belonged to a single, short-lived settlement, which also included a well, though there is little dating evidence to substantiate this suggestion. One sunken-featured building (196013) contained no datable finds, another (137083) produced a small assemblage of pottery which cannot be closely dated, and the third, possible building (268011) also contained relatively little, though amongst the pottery are sherds from a decorated jar or bowl which represents one of the rare, definitely early Saxon (5th–6th century) vessels from the EKA2. In contrast, the well (189018) produced a somewhat larger assemblage of pottery, including one group of late 6th–7th-century sherds. Despite the proviso that the finds represent a phase of disuse rather than use, a potentially wide date range is provided by the pottery from these features. On this basis, an alternative suggestion can be made concerning the chronology of the settlement, and rather than there having been two or possibly three contemporary sunken-featured buildings, the three buildings may represent a succession of structures, and perhaps occupied by descendants of the same family over a century or more.

The sunken-featured building (194086) in Zone 10, almost 500m to the south of the buildings in Zone 11, is likely to have been part of a separate settlement. The rather more prolific finds evidence from building 194086 allows a 7th-century date to be suggested as most likely for this example, and amongst the pottery are sherds from several Merovingian vessels imported from northern France in the 7th–8th century. The presence of continental pottery sets this building apart from the three in Zone 11, and perhaps it was in use later than any of those, though the absence of Ipswich Ware, found in some quantity on Zone 14, might preclude an 8th-century date (conversely, Merovingian material is absent from Zone 14, the features there attributed an 8th- to possibly 9th-century date; see below). In addition to the sunken-featured building in Zone 10, another building, excavated in 2005 a further 500m to the south on the north-facing slope of Cottington Hill (Egging Dinwiddy 2009b, 129–31), can be noted. However, the distance between this and the example in Zone 10 may be a little too great for them to have been part of the same settlement, though a 7th-century date is also suggested for the 2005 example (*ibid,*129–31). This produced no Merovingian material, though such an absence may reflect a cultural or economic rather than a chronological difference. Nevertheless, it may be significant in this respect that a notable assemblage of Merovingian pottery was recovered in 1996 from all five in a group of sunken-featured buildings at Manston Road, Ramsgate, where a 7th-century date is also proposed (Mepham 2009, 227).

All four of the sunken-featured buildings on the EKA2 appear to be of the standard two-post form, one aligned north-south and the others broadly east-west, as is the case for sunken-featured buildings more generally. There is nothing in the size or form of these, or the few examples excavated elsewhere on Thanet, that sets them apart in any way from Anglo-Saxon sunken-featured buildings recorded elsewhere in the country (Tipper 2004). No internal hearths or other features were present, and whether the buildings had floors on the base of the pit, or suspended planked floors, could not be established. Outside, apart from the well, few if any pits and no contemporary ditches were identified, though some Roman ditches must have survived as shallow hollows, as indicated by the Anglo-Saxon pottery recovered from the tops of some earlier ditches, particularly in the immediate vicinity of sunken-featured building 194086 in Zone 10. However, what has not been identified on any of the sites so far excavated in Thanet are the remains of post-built rectangular buildings similar, for example, to those found in association with sunken-featured buildings at Whitfield near Dover (Parfitt 1996). This may possibly in some cases be the result of truncation due to ploughing, but it seems that as elsewhere, not all of the sunken-featured buildings or groups of buildings were necessarily associated with post-built structures. Perhaps some of the sunken-featured buildings served as dwellings whilst others were used for craft or storage purposes, which is generally assumed to be the function of many of this type of structure elsewhere (Tipper 2004).

With the exception of pottery, which itself was present in only relatively small quantities, very few other finds were recovered, and nothing to indicate the functions or crafts, for example weaving, undertaken in individual sunken-featured buildings on the EKA2. The paucity of finds also extends to the environmental remains, with few animal bones (and nothing which might be interpreted as a 'special deposit') and virtually no charred plant remains of early Saxon date, insufficient to contribute usefully to our understanding of the agricultural economy in this period. This contrasts with the greater quantity and wider range of finds and environmental remains recovered from the group of sunken-featured buildings at Manston Road, Ramsgate, which provide evidence for an agricultural economy in the 7th century AD that exploited several different terrestrial, estuarine, littoral and marine zones, all within 5km or so of the site (Andrews *et al* 2009, 244–5). There is also a contrast between the early Saxon and mid-Saxon assemblages from the EKA2, with more finds and, particularly, environmental evidence obtained from the 8th-century mid-Saxon features in Zone 14 (see below). This difference can in part be explained by the relatively large number of pits in Zone 14, which served for refuse disposal, and their virtual absence in the early Saxon period where, although some rubbish was deposited in the pits of abandoned sunken-featured buildings, most is likely to have been disposed of on fields.

Overall, the use of at least three of the four sunken-featured buildings excavated on the EKA2 is likely to fall within the later 6th–7th century, broadly contemporary with the Anglo-Saxon burials in Zones 19 and 20 which were located on the higher ground approximately 0.75–1km to the north and north-west. Whether these cemeteries were the burying places of the people who lived on the slopes and lower ground below cannot be proven, but such an arrangement of intervisible settlement and cemetery has been frequently recorded

elsewhere, though there are examples of cemeteries adjacent to or within settlements, for example at Mucking, Essex (Hamerow 1993).

Considering Thanet overall, it is clear that in contrast to the large number of Anglo-Saxon burials recorded, the evidence for settlement is relatively slight (see Fig 5.61), though this is generally the case for Kent. Nevertheless, Moody (2008, 170) noted 13 excavated examples of Anglo-Saxon sunken-featured buildings on Thanet, most found as singletons along the south-facing slope below the Chalk ridge, but with a cluster of five on a single site at Manston Road on the south-west fringe of Ramsgate (Hutcheson and Andrews 2009). Another sunken-featured building has recently been found on the south-west periphery of Minster, in a similar topographic condition to those in Zones 10 and 11, but with a relatively early date in the 5th or early 6th centuries (Martin *et al* 2012, 48–50). Further traces of Anglo-Saxon settlement were recorded just to the south (Boast 2003) and this settlement may possibly have been related to an Anglo-Saxon cemetery of suggested 5th–6th-century date approximately 1km to the north, close to the top of the Chalk ridge, and immediately south of Zone 21 (Boast and Gibson 2000). More extensive excavation might have shown some of the apparently isolated sunken-featured buildings, perhaps individual farmsteads, to have been parts of dispersed settlements, or elements within a succession of structures which shifted over time, and many further sunken-featured buildings undoubtedly remain to be discovered. However, the large-scale stripping on the EKA2 has added a small but significant number to the few so far recorded.

Cemeteries

The earliest Anglo-Saxon burials on the EKA2 appear, mainly on the basis of the grave goods, to belong to the mid-6th century and the latest, excluding those in Zone 14 (see below), to the late 7th or early 8th century. All of the burials were made along the Chalk ridge, in Zone 19 and the eastern part of Zone 20, and may have belonged to possibly three cemeteries, which are considered separately below. In addition, an apparently isolated burial in Zone 6 could be of Anglo-Saxon rather than Roman date (on the basis of the two beads it contained); this is not further considered below. In the discussion here, the three Anglo-Saxon burials excavated in 1983–4, in Zone 19, during the installation of a pipeline (Perkins 1985), are also included as they formed part of one of the cemeteries there. However, it is clear that none of the cemeteries was fully excavated, with the layout of graves indicating that further burials lay beyond the limits of excavation, and this necessarily limits the conclusions that can be drawn, particularly in comparison to some of the larger and more fully excavated cemeteries in East Kent.

All the burials were inhumations, as is almost exclusively the rite in East Kent (Richardson 2005, 90–2). Grave size varied, typically for the period, with the majority sub-rectangular, and these included one double and one triple burial with the bodies placed side by side in the grave. There were also three deeper graves where two bodies had been interred ('stacked'), one on top of other. Grave structures, internal or external, were rare, but there was evidence for coffins in a small number of graves and two (one excavated in 1983–4) had somewhat more elaborate structures in the form of what appear to have been reused boat timbers placed over the body. Such embellishments are largely characteristic of the 7th century and later (Hogarth 1973; Richardson 2005, 123–4; Brookes 2007b), though it can be noted that, apart from evidence for a coffin in one grave, no associated structures were recorded in the probably 8th century, mid-Saxon cemetery in Zone 14.

Most of the bodies had been laid out in an extended supine position with the head to the west, as is typical in East Kent (Stoodley 1999, 63–6), and the arms either at the sides or crossed at the pelvis and the legs laid together or crossed. However, there were two adjacent burials on the eastern edge of the northern cemetery which were aligned north-south, suggesting that these two individuals had been marginalised. The majority of the graves were aligned approximately west-east, with minor variations reflecting local topography and the course of an adjacent contemporary trackway. It can be noted here that none of the earlier Bronze Age barrows recorded on the EKA2, particularly the six along the Chalk ridge in Zones 21 and 23, formed a focus for burial in the Anglo-Saxon period, perhaps because the mounds had already been substantially diminished through ploughing and the monuments were no longer prominent in the landscape.

Grave goods were recovered from 40 (74%) of the 54 excavated graves (including 'empty' graves), with metalwork – the majority iron – providing most of the artefactual evidence. As in other Anglo-Saxon cemeteries in south-east England, grave goods were used to signal the gender of the deceased, with status reflected by differences in the quantity and quality of the grave goods. In the cemeteries under consideration here, however, there is relatively little that can be deduced from the limited number and range of weapon burials, though some of the other, mainly female, assemblages do exhibit rather more variation in terms of the wealth that they may represent. Nevertheless, in a wider context, none can be regarded as truly wealthy when, for example, compared with some of the individuals interred at Sarre (Perkins 1991a; 1992b) and Dover Buckland (Evison 1987).

In Zones 19 and 20, three separate areas of graves have been identified, defined above as the northern, southern and western cemeteries respectively, all three lying alongside a trackway which ran broadly east-west along the brow of the Chalk ridge. The apparently linear arrangement of the southern and western cemeteries make them somewhat different in plan to that in Zone 19, which appears to comprise several separate groups (see below). Furthermore, there is a hint from a small number of the grave goods that the northern cemetery, or at least part of it, may have been established slightly later and perhaps continued in use for at least a decade later than the southern and western cemeteries.

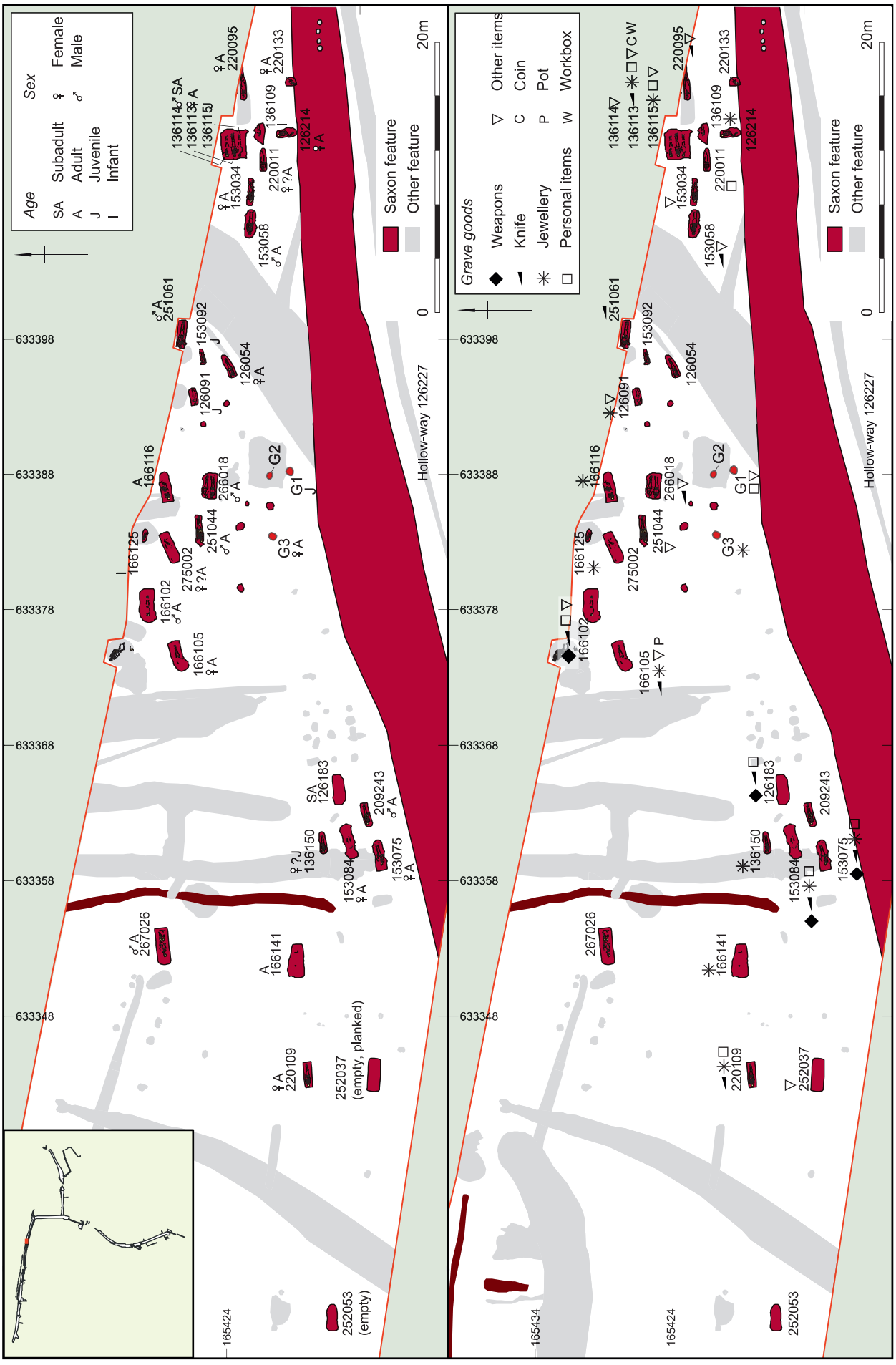


Fig 5.57 Early Saxon cemetery 126228 (Zone 19): a) distributions by age and sex. b) distribution of grave goods by category

Although found as an unstratified metal-detector find in 1983–4, an imitation gold *solidus*, framed in beading and looped, and probably dating to the second half of the 7th century (Metcalf 1985), may also have come from the area of the northern cemetery, thereby providing a further hint that this cemetery continued in use at least until the end of the 7th century.

Zone 19 Northern cemetery

The northern cemetery was the largest of the three and lay along the north side of the trackway, clearly extending beyond the northern limit of excavation (Fig 5.57). Twenty-nine graves were excavated in 2010, adding to the three investigated in advance of pipe laying in 1983–4 (Perkins 1985). Two graves, both towards the western limit of the cemetery, contained no human bone and can be regarded as 'empty', possibly cenotaphs. Thirty-three individuals came from the other 30 graves, one of them the double burial and a second the triple burial where the individuals had been buried side-by-side in the grave. These represent examples of multiple burials such as have been recorded, albeit infrequently, in a number of cemeteries of this period and which may reflect simultaneous deaths in rural communities (Stoodley 2002, 121; citing 165 contemporary double burials nationally). Multiple burials commonly contain individuals of the same sex but often differing in age or status (Brookes and Harrington 2010, 61), though this is only partly the case here where at least one of the graves contained a male and a female, though both contained individuals of different ages. The northern cemetery did not contain any stacked burials ('stacking' is a much less frequent occurrence), examples of which were present in the other two cemeteries, and there was no evidence for other disturbed or revisited graves.

Overall, there were 12 (39%) adult females or possible females, six (19%) male adults, two (6%) adults of uncertain sex, three (9%) subadults (two of them males), five (15%) juveniles, two (6%) infants and two (6%) individuals of indeterminate age/sex. No obvious patterns were apparent in the distribution of graves according to age and sex, though one or two observations are made below in respect to certain individuals and their possible status.

Within the northern cemetery, three or more separate groups or clusters of burials can be distinguished, perhaps representing family plots, particularly as no chronological differences can be clearly identified. There were no intercutting graves within any of these groups and elements of as many as five or six north-south rows can be discerned in the largest, central group, with slightly varying alignments. This group comprised 10 graves containing single individuals (three adult males, three adult females or possible females, one adult, two juveniles and one infant) and the one double grave (an adult female and a subadult male), which lay on the southern edge of the group. However, it is possible that the three graves (an adult, a juvenile and an indeterminate individual; G1-3) excavated in 1983–4 a short distance to the south, and aligned to the trackway, were also part of this group which, if so, would comprise at least 14 graves. Four of these 14 graves contained no grave goods (one juvenile and at least two adult females), and grave goods in the others were of a moderate nature. No female burial was in any way outstanding, but what may have been the principal male grave (166102) was also one of the largest and the burial, probably coffined, was accompanied by a seax, two knives and a buckle – the only weapon burial in this group though, unusually, no spearhead was present with the seax. Other knives accompanied two adult female burials (grave 166105 with two knives, and double grave 266018), one adult male burial (grave 251061) and the juvenile excavated in 1983–4 (with two knives), and the latter is also noteworthy as it contained evidence for the reuse of boat timbers as a possible grave cover (Perkins 1985, 51–3 and 58–9), one of two or possibly three graves with similar remains in the northern cemetery, discussed further below.

Only 10m or so to the east of the central group of burials was a further group of at least eight graves which lay immediately to the north of the trackway. Five graves were aligned west–east and contained single individuals (one adult male, three adult females or possible females and one juvenile), two were aligned north-south and also contained single individuals (two adult females), and there was the one triple grave (an adult female, a subadult male and a juvenile). Within this group, adult females (60%) predominated and included those in the two north-south graves (126214 and 220133) on the southern edge of the group. The latter graves, partly eroded through continued use of the trackway, contained the only unaccompanied burials, and this, their orientation and their peripheral location all points to them in some way having been 'special', perhaps semi-excluded from the group for reasons which remain obscure. Grave goods were relatively sparse, with the exception of the triple grave (136111), and there were no weapon burials; knives accompanied an adult female (grave 220095, with two knives) and an adult male (153058). Triple grave 136111, which may have been the focus of this group,

Pl 5.17 Series B sceat from grave 136111 (Zone 19)

provided important dating evidence, in that it contained the only coin, a Series B sceat which is likely to have been deposited around the last decade or so of the 7th century or possibly the very early 8th century (Pl 5.17). This is a typical Kentish find. Also indicative of a late 7th-century date for this grave is a copper alloy work box, and a barrel lock mechanism suggests the presence of another, wooden, box. Other finds included a small long brooch (of 5th–6th-century date and thus likely to represent an heirloom; the pin is missing), buckle plate, knife, firesteel, comb and a lump of shale, possibly a curio, its ovoid, undiagnostic form currently unparalleled.

Approximately 12m to the south-west of the central group of burials was a cluster of five graves and, beyond this, three further dispersed graves, with two apparently empty graves (252037 and 252053) on the edge of this group. The cluster of five graves lay immediately to the north of the trackway and appeared to take their WSW–ENE alignment from this route. These graves contained one adult male, two adult females or possible females, one subadult and one juvenile, whilst the three outliers contained one adult male, one adult female and an individual of indeterminate age and sex. There were no weapon burials in this group and two of the burials were unaccompanied (126183 and 267026). However, knives were present in four graves, three with adult females (153075, 153084 and 220109) and one with an adult male (209243), and two of these females also had shears (153075 and 153084) and one a chatelaine (220109). The adult female in grave 153075 is noteworthy as it was also accompanied by what may have been a relatively elaborate weaving tool, made of copper alloy, suggesting that this may have an important individual within the group. The male burial with a knife (209243) provided a second example in this cemetery of a grave containing evidence (in the form of 18 clench bolts and roves) to suggest that boat timbers had been reused as a grave cover. Also of interest in this respect are the seven iron brackets from grave 252037, which contained no human bone, as these indicate the presence of some form of timber structure, possibly a box or a coffin. This raises the possibility that at least this one of the two empty graves had once contained a body that was subsequently removed, and this suggestion is further supported by the presence of several fragments of a copper alloy work box.

Zone 19 Southern cemetery

The southern cemetery lay along the south side of the trackway and comprised what appears to have been a linear arrangement of at least 16 graves extending over a distance of more than 60m, with further graves probably lying in the unexcavated area to the south (Fig 5.58). The graves, most at least 1.5–2m apart, included two (189172 and 218200) that contained no human bone, but all broadly reflected the alignment of the trackway. The two empty graves, perhaps cenotaphs or robbed graves, lay towards the western end of the group, with a disturbed burial (216004) the last in the line. At the eastern end were three further graves (171168, 189178 and 286013) that had been disturbed in antiquity, and there was another (228044) in the centre of the group (see Pl 5.7). Four of the five disturbed burials were adult females and only one an adult male. There were also two graves (218203 and 250050) with stacked burials within the centre of this group, grave 218203 containing an adult male above an adult female, and 250050 containing two adult males. Overall, therefore, there were 14 graves containing a total of 16 burials, comprising eight adult males or possible males, six adult females or possible females and two infants, both the infants lying close together along the north side of the group. The adult males were confined to the eastern half of the group whereas the adult females were distributed throughout the cemetery.

The two infants and an adult female were the only unaccompanied burials, the other 11 having a varying number and range of grave goods. There were three weapon burials (27%), contrasting with the much lower occurrence in the northern cemetery (3%), and all of these were adult males. However, in each case only single weapons were present, comprising one individual with a shield boss (250050) and two burials with spearheads (189174 and 286009). The shield boss came from one of the two graves containing stacked burials and is unusual in that it was not associated with a spear. Seven graves contained knives, and included one male burial that also had a spearhead (189174). Other knives came from four adult female graves (171168, 189178, 280022, 228044, one of them (228044) with two knives, one probable male grave (286013) and one grave (280022) containing a stacked burial.

Grave 171168, containing an adult female, had been disturbed, but was exceptional in the southern cemetery in terms of its grave goods, though there was nothing which set this grave aside from the others in terms of its size and location, towards the eastern end of the group. The grave goods do not indicate an individual of particular wealth, but rather suggest a woman of relatively high standing within the local community. As well as the knife noted above, there was a range of items including a silver shield pendant, penannular brooch, finger-ring, chatelaine, evidence for a bag or purse and possibly also a box, shears, comb and a small group of beads, several of amethyst, which occur most commonly in later 7th century contexts (Geake 1997, 41).

Zone 20 Western cemetery

The western cemetery was the smallest of the three and, like the southern cemetery, comprised a linear group that lay along the south side of the trackway, extending for a distance of approximately 25m (Fig 5.59). Only five graves were exposed and investigated, but others may lie to the south beyond the limit of excavation.

The five graves included one (252076) containing a stacked burial, making a total of six burials in this group (Pl 5.8). These comprised one adult male and one probable male (282014, based on the presence of a spearhead), three adult females or possible females and one subadult/adult, the latter (217135) the only disturbed burial in this group.

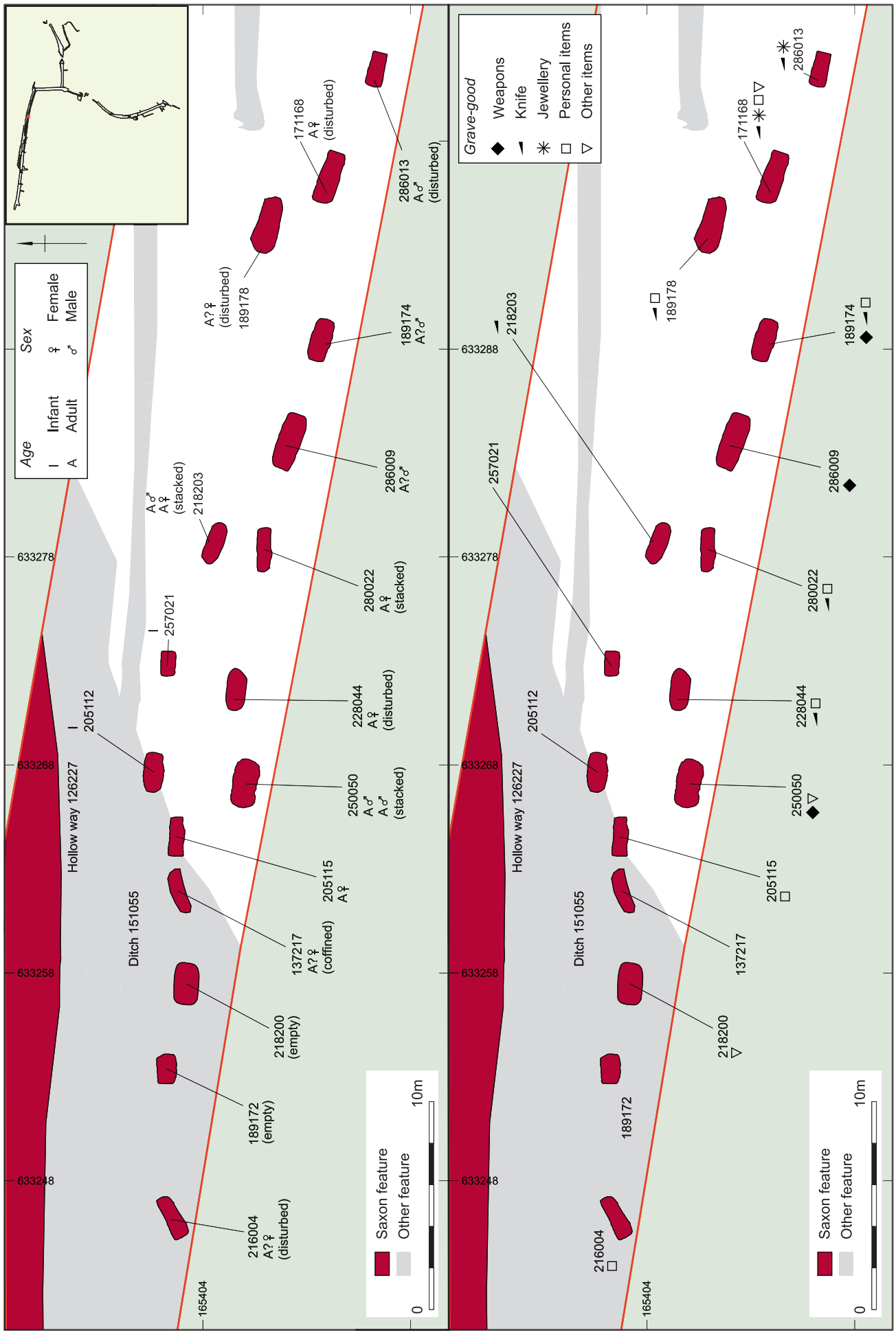


Fig 5.58 Early Saxon cemetery 195119 (Zone 19): distributions. a) distributions by age and sex. b) distribution of grave goods by category

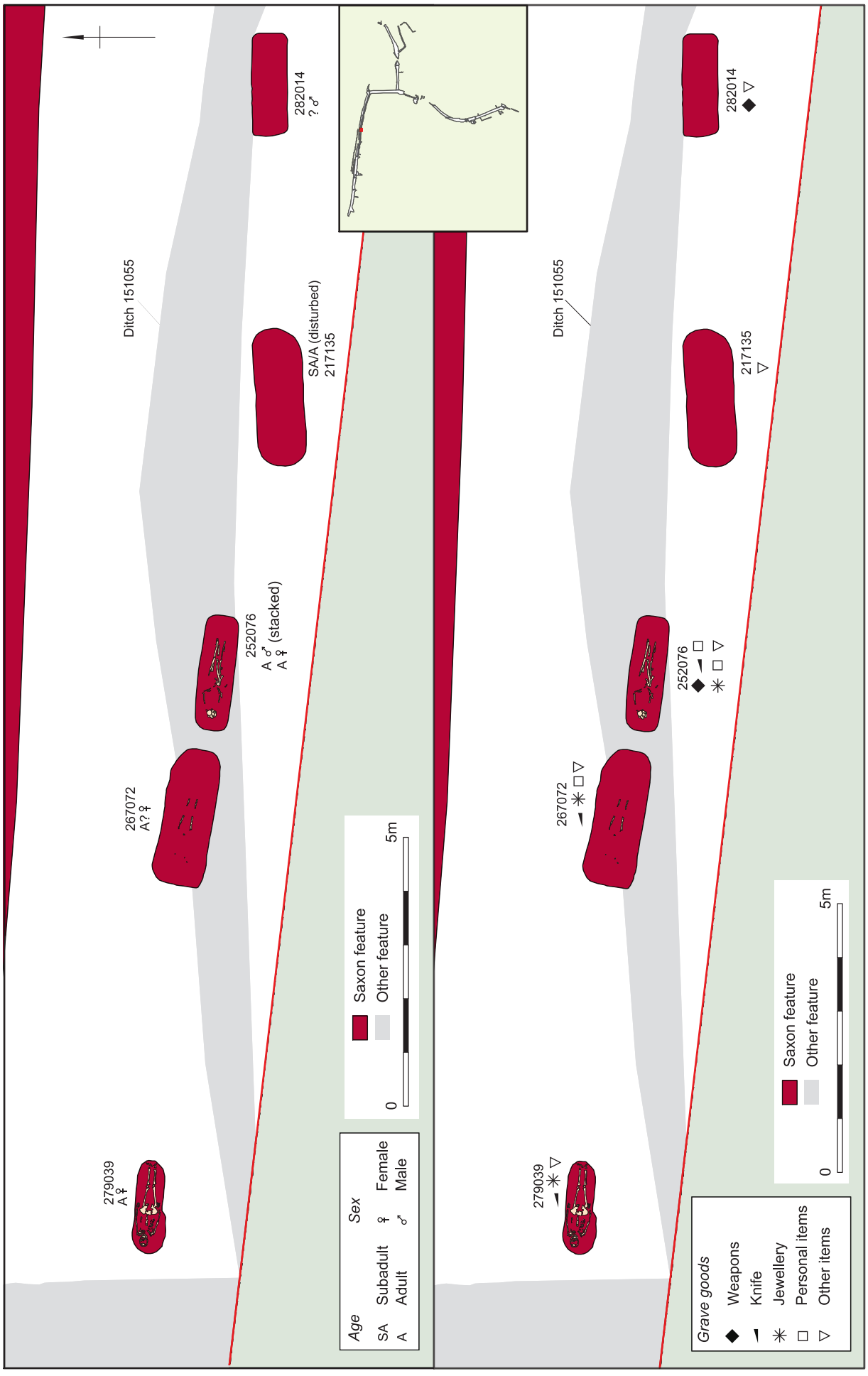


Fig 5.59 Early Saxon cemetery 195116 (Zone 20): a) distributions by age and sex. b) distribution of grave goods by category

Two of the five graves contained weapon burials (282014 and 252076), in both cases spearheads, that in grave 252076 was accompanied by a knife. Other, single knives came from adult female graves 279039 and 267072. Two weapon burials from five graves (40%) represent the highest percentage recorded from the three cemeteries, but the small sample number makes this figure unreliable. However, there are also one or two other factors amongst the grave goods which sets this cemetery somewhat apart from the other two. In particular, there are three adult female graves that had assemblages of grave goods which, whilst not wealthy, are noteworthy in terms of most of the other adult female graves excavated in Zones 19 and 20. Grave 267072 was the most prolific, with two of the three silver objects from Anglo-Saxon graves, comprising part of a silver scutiform pendant and fragments of silver binding (possibly from a sheath associated with the knife in this grave). Other objects included a copper alloy keystone disc brooch with applied silver rim, an annular brooch, a strap end, two knives, a possible chatelaine and 237 beads – by far the largest number from any of the graves, the majority glass, 18 amber but none amethyst, which together suggests a later 6th rather than 7th-century date for this burial (see Pl 5.9). Grave 279039 also contained two brooches, one annular and the other a small long brooch, as well as a comb, knife, 15 glass and four amber beads, perhaps indicative of a mid-6th century date for this burial. The small long brooch is complete and of unusual form, for which no precise parallel is known; it is of likely earlier, 5th–6th-century date, but may be an heirloom. Burial 252079, the lower of the two stacked burials in grave 252076, was accompanied by objects including a copper alloy buckle, spindle whorl, 14 glass and 17 amber beads.

Discussion of cemeteries in Zones 19 and 20

The early–mid-Saxon cemeteries in Zones 19–20, assigned to the 6th–late 7th or possibly early 8th centuries, formed part of a long sequence of prehistoric and later activity along the south-facing brow of the Chalk ridge. This location is itself likely to have been an attraction for burial in the Anglo-Saxon period because, as Lucy (2000, 128) argues, such topographic features served as markers for people who went to cemeteries to take part in ceremonies of interment and remembrance. The cemeteries in Zones 19–20 would have commanded extensive views over the Wantsum Channel to the south, as did several others nearby including the large cemetery at Ozengell/Lord of the Manor, with 243 recorded graves spanning the 5th–7th centuries (Perkins 1989), and the smaller site at Cliffs End Farm with at least 23 early 6th–7th-century graves (McKinley forthcoming) (see Fig 5.61). Both these cemeteries are likely to have been focused on upstanding Bronze Age barrows, and thus visible from the seaward entrance to the Wantsum Channel (Brookes 2007a, 70), whereas this seems not to have been the case for the cemeteries in Zone 19, although they were sited on the brow of the Chalk ridge. However, this may have been a factor in the location of the cemetery to the west in Zone 20, where recent geophysical survey has revealed part of a ring-ditch or small enclosure approximately 20m across, lying immediately on the Chalk ridge immediately to the south of the burials (Wardell Armstrong 2013). The Chalk ridge was the location of a relatively large number of Bronze Age barrows, several of which lay towards the west end of the EKA2, though none of the excavated examples had formed a focus for Anglo-Saxon burial, as was often the case elsewhere (Williams 1997). Richardson (2005, 72–6) has shown that not only was the reuse of earlier monuments, particularly barrows, common in East Kent, but that this practice only became widespread from the late 6th century, perhaps providing further, indirect evidence that the six Bronze Age monuments in Zones 21–23 had been largely obliterated through ploughing by this time and thus were not chosen as sites for cemeteries.

Possibly the most important factor in the location of the cemeteries, other than their topographical setting, was the presence of a routeway which was in existence from at least as early as the early Roman period, running along or just below the crest of the Chalk ridge (Fig 5.61). The use of this communications route continued in the Anglo-Saxon period with the development of a trackway or hollow-way on a slightly different course to its predecessor(s), and this probably extended into the north-eastern part of the island (Moody 2008, fig 95). It was alongside this that the cemeteries in Zones 19–20 were established, and four others are known to the east at Laundry Hill (5th–6th century?; Boast and Gibson 2000), Mount Pleasant (mid-7th–early 8th century; Riddler 2008), Monkton (early 6th–7th century; Hawkes *et al* 1974) and the major site at Sarre (5th–7th century; Perkins 1991a; 1992b), spaced at intervals of between approximately 1–2km. When precisely this particular trackway developed could not be established, but it can be postulated, on the basis of the earliest Anglo-Saxon graves, that it was in existence from at least as early as the late 6th century. The significance of routeways in connection with cemetery location has been highlighted by Reynolds (2011, 350) in connection with the Anglo-Saxon cemeteries at Saltwood, near Folkestone, though at Saltwood the cemeteries were focused on several Early Bronze Age barrow monuments alongside a series of later trackways and hollow-ways.

All of the burials within the areas excavated were made in flat graves, and there are no examples of graves surrounded by small, penannular ring-ditches, likely to date to the late 6th and 7th centuries. Such funerary structures are known from other broadly contemporary cemeteries in the vicinity, for example, at Ozengell/Lord of the Manor (Perkins 1989) to the east and from aerial photographs of another, largely unexcavated cemetery to the west near Laundry Road (Boast and Gibson 2000). However, the small cemetery comprising 18 graves at Mount Pleasant on the A253 north of Minster (Riddler 2008, 279) and the 23 graves investigated at Cliffs End Farm (McKinley forthcoming), the majority of probable 7th-century date, contained no examples with penannular

ditches. The absence of internal grave structures is also apparent at both these cemeteries and those on the EKA2, with the notable exception of the two graves containing reused boat timbers in the northern cemetery in Zone 19 (see above). The presence of rows of clench bolts and roves overlying the bodies is likely to represent the remains of covers reusing parts of clinker-built boats, perhaps indicating a connection of the occupants (one adult male and one juvenile) with maritime trade or sea-travel (Brookes 2007a, 14–15). Similar burials are known from other cemeteries on Thanet (Moody 2008, 166) as well as in Kent, for example Saltwood near Folkestone (Reynolds 2011, 358).

There were three graves containing stacked burials, with two bodies on top of each other, the uppermost burials in each appearing to represent later insertions rather than contemporary interments. This was an occasional practice in the earlier Anglo-Saxon period (Hirst 1985, 38–43), until the reuse or robbing of graves was forbidden by ecclesiastical councils and law codes (Zadora-Rio 2003, 2). In addition to the stacked burials, a further six or more graves showed evidence for disturbance, probably a result of either revisiting or robbing in antiquity. This practice is almost unknown in England outside East Kent, but is a common feature of Merovingian-period cemeteries on the continent, suggesting that even if Franks were not actually present then there was a familiarity with their burial customs (Welch 2007, 222–3). In connection with this, two Frankish wheel-turned pottery bottles can be noted, one dated to 630–670/700, both from graves in the northern cemetery in Zone 19. Perkins (1987, 230–1; Perkins and Hearne 1995, 267) has drawn attention to this practice elsewhere on Thanet where, for example, 14% of the graves at Sarre had been disturbed, (a similar percentage is recorded at Lyminge II), while in Zones 19–20 the figure is 13%. This excludes graves which contained stacked burials and 'empty' graves, at least some of which may have been revisited or robbed, though the absence of human bone makes cenotaphs a more likely interpretation for at least some of the latter.

Overall, 74% of the graves in Zones 19–20 contained grave goods, the same as at Cliffs End Farm (Stoodley forthcoming), but somewhat more than the 44% at Mount Pleasant (Riddler 2008). However, the percentage of weapon burials (11%) was much lower than at Cliffs End Farm (22%) and a number of other larger Kentish sites, including Sarre and Dover Buckland (Evison 1987), but is the same as recorded at Mount Pleasant. At all three sites the majority of weapons were spears, with a single shield boss and a seax in Zones 19–20, neither of which were accompanied by other weapons, in particular spearheads, which was the usual combination (Richardson 2005, table 50). Graves without grave-goods on all three sites are perhaps more likely to represent impoverished graves rather than a chronological difference reflecting the decline in the number and range of grave-goods deposited from the later 7th century onwards (Geake 1997).

Mid-Saxon

It is reasonably clear that the cemeteries revealed on the Chalk ridge in Zones 19 and 20 continued in use from the late 6th to the late 7th century and burial may still have been taking place there at the beginning of the 8th century. It is also possible that one or more of the sunken-featured buildings in Zones 10 and 11 were in use at a similarly late date, towards the end of the 7th century, though this is less certain. However, excavations in Zone 14 (and the west end of Zone 15) have added important new evidence to our knowledge of mid-Saxon Kent in the 8th century, revealing an unusual – possibly unique site – with apparently contemporary remains of settlement, burial and a shellfish processing industry.

Settlement

The two areas of Anglo-Saxon settlement – in Zones 10 and 11 to the west and Zone 14 to the east – lay approximately 1km apart, with that in Zone 14 occupying the higher ground on the Cliffs End Spur at Foads Hill (see Fig 5.61, Pl 5.18). As far as can be determined from the pottery, there appears to have been no chronological overlap between these settlements, with continental Merovingian wares exclusive to the sunken-featured building in Zone 10 (and two graves in Zone 19) and Ipswich Ware, its use probably largely restricted to after *c* 750/775 in Thanet (see Cotter, below), exclusive to Zone 14. A single sherd of reticella glass, also from Zone 14, may date to the very late 8th or early/mid-9th century, and provides a further crumb of evidence in support of the chronology suggested for the pottery. In addition, there is a hooked tag of likely 8th- or 9th-century date, and it can also be noted here that radiocarbon dating of three burials in the cemetery in Zone 14 produced consistent mid-7th–late 8th-century date ranges; this is discussed further below. The growth of the settlement in Zone 14 might be traced to the reign of Withred (690/1–725) or shortly after when, although the power of Kent was on the wane as Mercian influence increased, there was a measure of stability to the succession in the kingdom.

Within Zone 14, two separate areas of mid-Saxon pits are clearly apparent, lying almost 200m apart, with both groups of pits continuing beyond the northern and southern limits of the excavation area. The group to the west, associated with the cemetery and including the majority of the shellfish processing remains, extended over a distance of approximately 100m, while that to the east was slightly smaller. Why there should have been what appear to be two foci of settlement is unknown, and as far as can be established they were broadly contemporary, with Ipswich Ware present in some pits within both groups. It may be that there was a slight but undetectable shift in settlement, or that there were two separate family groups occupying adjacent sites.

Two obvious differences between the settlement in Zones 10 and 11 and that in Zone 14 are the presence of pits and the absence of sunken-featured buildings in the latter, another factor likely to reflect the chronological

Pl 5.18 Overview of Zone 14, the focus of mid-Saxon settlement, on the rising ground of Foad's Hill to right; Cliffs End lies beyond, close to the edge of Pegwell Bay (view from east)

difference between the two sites. No domestic structures were identified in Zone 14 but a number of postholes, most of them shallow and undated, were recorded amongst the eastern and western groups of pits. No coherent building plans could be discerned and it is suggested above that some of these postholes may have defined fence lines, though it must be admitted that none is clearly apparent. Overall, the apparent lack of domestic structures is thought more likely to be an absence of evidence rather than evidence for absence, and might be explained in two possible ways. Mid-Saxon buildings were usually of post-built construction, often comprising individual postholes, though posts were sometimes set within continuous bedding trenches, and on the heavily ploughed higher ground in Zone 14 it is possible that such features had been wholly truncated. A second possibility, particularly in the case of the western group of pits, is that some relatively small features such as postholes were not detected within a layer of bioturbated subsoil through which features had been cut; and even larger features such as pits and ditches were only distinguished at this level where they contained large quantities of shell, and hearths where they utilised a moderate quantity of stone in their construction. Some of these hearths may have been internal rather than external features. The disposition of pits can occasionally be used to infer the location of buildings which have otherwise left little or no trace, but this has not proved possible in either of the two groups here.

Almost identical numbers of pits were exposed within the two groups, with 55 in the western group and 52 in the eastern group (which extended into Zone 15). The pits varied in shape, though more than 50% were oval and approximately 25% subrectangular, and most were between 1 and 2m long, 0.5–1.5m wide and 0.5–1m deep. They had generally similar fills, containing relatively few finds, and their purpose is not clear, for there is little clear evidence that they were used for the disposal of domestic refuse, contrasting with the relatively abundant finds from the mid-Saxon pits recently excavated at Lyminge, for example (Brookes and Harrington 2010, 103). However, the nature of some of the fishbone remains does suggest that a number of the pits contained deposits of cess. Furthermore, substantial deposits of marine shell were present in a large number of features, probably representing the remains of more extensive middens (see below). No obvious patterns were observed in the distribution of pits in either of the groups, in contrast to the layout of pits at nearby Cliffs End Farm, excavated in 2004–5 (McKinley forthcoming).

The site at Cliffs End Farm lies approximately 500m to the south-west of the pit groups in Zone 14, and is also located on relatively high ground overlooking Pegwell Bay (see Fig 5.61). A complex of 74 mid-Saxon pits was recorded, and it is suggested that most date to the 8th century, on the basis of very limited dating evidence, making them broadly contemporary with

those on Zone 14. They were of similar size, form and character, and many contained shellfish deposits, though not in the same quantities as on Zone 14, and only one contained cess. Unlike the somewhat dispersed and apparently random arrangement of pits in Zone 14, many of the pits at Cliffs End Farm appeared to form more regular lines which might be interpreted as plot or property boundaries, though a greater area would need to be exposed to confirm this. Nevertheless, the pits clearly represent a third focus of mid-Saxon settlement in this same part of Thanet, perhaps contemporary with those in Zone 14, and forming an unusual polyfocal pattern of settlement. As in Zone 14, no associated buildings were identified, possibly because they lay further south within the postulated plots, which extended beyond the limit of excavation.

Further, broadly similar evidence for mid-Saxon settlement came from a small excavation at Oaklands Nursery, close to Pegwell Bay and just under 1km south-west of Zone 14 and 400m from Cliffs End Farm, where pits, a ditch and several possible postholes were found (Perkins 1998). Finds included 8th–9th-century pottery, fragments of two combs and an iron latchlifter, animal bone and shellfish remains (mostly oyster), and some sandstone slabs and burnt daub, the overall assemblage reminiscent of that from Zone 14.

Other than a moderate assemblage of pottery there were relatively few finds from the pits in Zone 14, but the 65 sherds of Ipswich Ware (representing a minimum of 19 vessels) are certainly noteworthy. They represent the third largest group of this ware in Kent, only exceeded by those from Canterbury and Minster-in-Sheppey, though in neither case are these other two groups from a single site. A single Ipswich Ware vessel was also identified amongst the very small early–mid-Saxon pottery assemblage from Cliffs End Farm (Mepham forthcoming), and Ipswich Ware is also reported from nearby Oaklands Nursery (Trust for Thanet Archaeology 1998). The presence of Ipswich Ware, deriving from East Anglia, indicates a site involved in trade, though no continental pottery is present in the assemblage from Zone 14. Apart from this, only a single sherd of glass is of particular note and hints at the wider connections of the settlement. The small piece of reticella glass, possibly from a bowl, is almost certainly a continental import and of very high quality though its significance in terms of the status of the settlement cannot be ascertained. No other glass was recovered, and if not intended for melting down to make beads, which is considered unlikely in this case, then it may represent a sherd kept as a curio. There are also a few fragments of imported lava rotary quernstones which came from the Eifel area in modern Germany, and lava quern fragments were also present at Cliffs End Farm (Hayward and Leivers forthcoming).

A small quantity of slag indicates that iron smithing took place in the vicinity of Zone 14, whilst a spindle whorl and a loomweight provide a modicum of evidence for domestic craft activities. The presence of at least 12 knives (from both groups of pits) and three whetstones are considered below with the shellfish remains. Other iron finds include a girdle hanger, an awl and various fragments of strip, rod, sheet and bar, some possibly related to the iron smithing activity. From pits of probable mid-Saxon date, but which contained no pottery, came a few domestic and agricultural implements including part of a hooked cutting tool, two shears blades, a draw knife, a possible candle holder and a bucket handle. No coins were found, which at this time would most likely be post-750 large-flan pennies rather than the smaller, earlier sceattas, and the only copper alloy objects are a hooked tag of probable 8th- or 9th-century date and a fragment of perforated strip, both from the western group of pits. The overall significance of the finds assemblage is discussed further below.

Cemetery

The small, mid-Saxon cemetery in Zone 14 comprised 24 east-west aligned graves, one of them empty and one containing an adult and an infant (Fig 5.60). The graves formed a compact group, with two outliers to the west, and the cemetery appears to have included four north-south rows of between three and seven graves. Only two graves intercut and the small number of graves suggest that the cemetery was relatively short-lived, or that the graves were clearly marked, either by mounds or perhaps by wooden markers. The burials were consistent in that they were all oriented west-east, extended and supine, and there was nothing that set any of the graves apart in terms of their size and form.

Grave-goods were absent in all but one grave (223033), where there was a knife, and this was also the only grave to contain evidence for a coffin, represented by a few nails. On this basis alone, an 8th-century date might be suggested for the use of the cemetery, and a date in the first half of the 8th century would be supported by the radiocarbon dates of cal AD 660–780 (SUERC 40307–8) and cal AD 650–780 (SUERC 40306, see below) from three of the graves. Certainly, the virtual absence of grave-goods from this cemetery sets it apart from those in Zone 19 which are thought to date to the late 6th–late 7th/early 8th century. It may not be significant, given the relatively small number, but there was no evidence for the robbing or reuse of graves in Zone 14 similar to that found in several graves in Zone 19, and this might in part be attributed to these practices being forbidden by ecclesiastical councils or laws post *c* 700.

The adults in the Zone 14 cemetery were evenly balanced in terms of sex, with eight certain or possible males and seven certain or possible females. Five adults could not be sexed, and there was also a subadult male, two juveniles and an infant. Two adult males lay slightly apart on the western edge of the cemetery, but otherwise male and female adults and the younger individuals showed no obvious patterning. What is particularly noteworthy, however, is the difference in age of death of the adults, with only approximately 10% of the males living beyond 45 years whereas the figure is around 60% for the females. The reason for this difference can only be surmised, but is almost certain to represent cultural or economic factors.

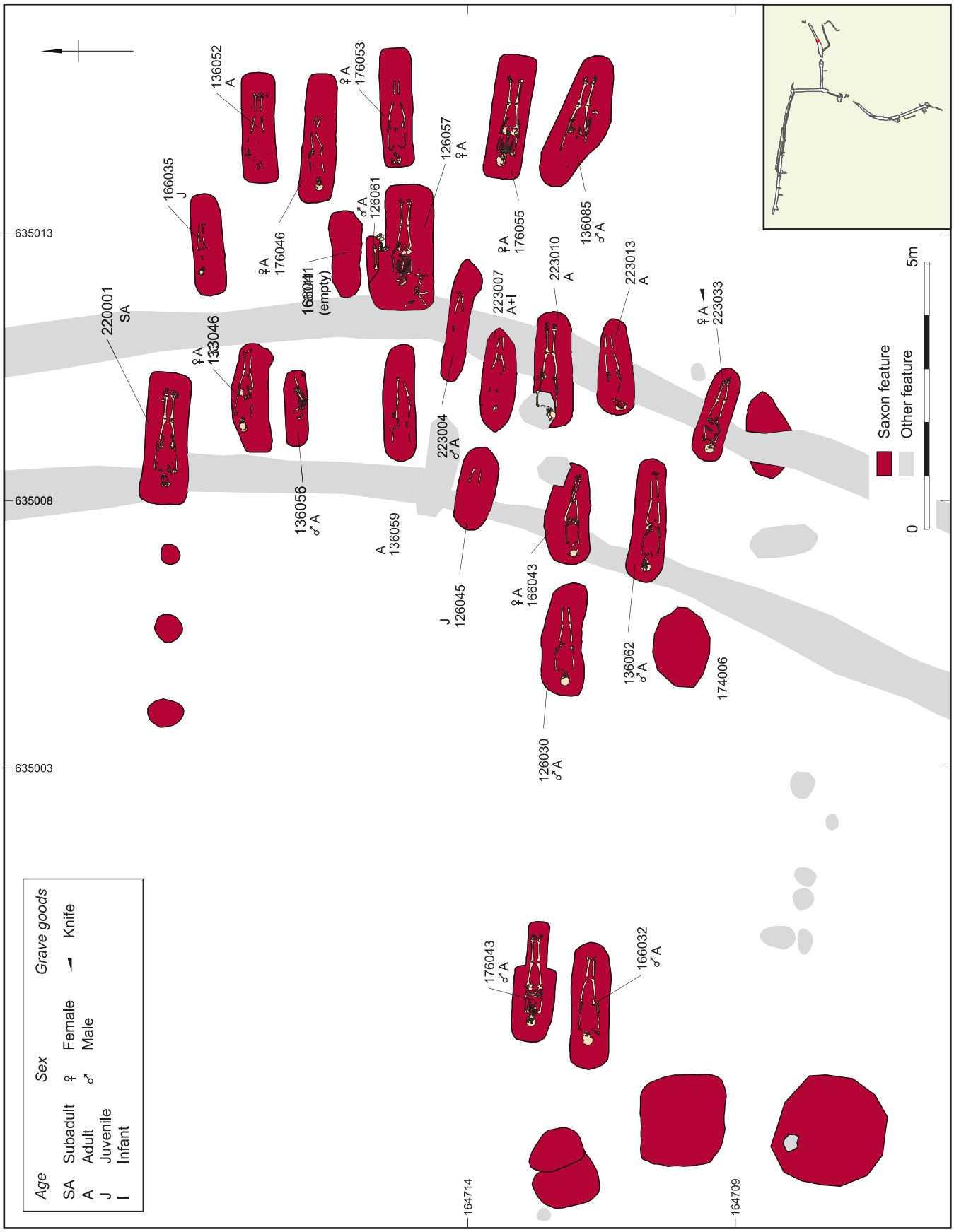


Fig 5.60 Mid-Saxon cemetery (Zone 14): distributions by age and sex

The Zone 14 cemetery is of particular importance because it falls early within the period of transition from field cemeteries to churchyards (though this transition is not straightforward), it apparently lay within an area of contemporary settlement, and it has been fully excavated. Zadora-Rio (2003) has recognised that there was a great variety of burial locations between the 7th and 12th centuries and that this was not a reflection of levels of christianisation, since churchyard burial only became the norm in the 10th–12th centuries. In fact, prior to this there was no doctrine which prohibited clothed burials or the deposition of grave-goods, or indeed using pagan burial grounds. However, there is a clear decline in the deposition of grave-goods in the late 7th–early 8th centuries, which corresponds with the abandonment of earlier burial grounds. This seems also to be the case here, with the largely unfurnished graves in the Zone 14 cemetery contrasting with those in Zone 19 where burial appears to have ceased perhaps only a decade or two earlier.

The relationship between the cemetery and settlement (or settlements) remains unclear, as there is insufficient chronological precision to know whether the cemetery related to one or other of the postulated settlement foci in Zone 14, or that at Cliffs End Farm, or was possibly shared by all three. Of possible significance in this respect is that no mid-Saxon pits were cut by any of the graves, indeed these appear to have been respected by the pit digging activity, which in turn suggests that the cemetery was the earliest mid-Saxon 'feature' in this part of the site. The evidence is tenuous, but perhaps the initial use of the cemetery was associated with the eastern of the two pit groups in Zone 14, or with the settlement at Cliffs End Farm, and was later surrounded by settlement activity represented by the western group of pits, many of which contained large deposits of marine shell. The absence of shellfish debris from the grave backfills provides some further support for this proposed sequence of events and their disposition within the landscape.

Settlement and burial during this period became less influenced by topographical features, contrasting with the earlier Anglo-Saxon period when settlement was often confined to lower lying areas and cemeteries were located on higher ground or utilised extant, earlier monuments, in particular Bronze Age barrows (Fig 5.61). Furthermore, in the mid-Saxon period there

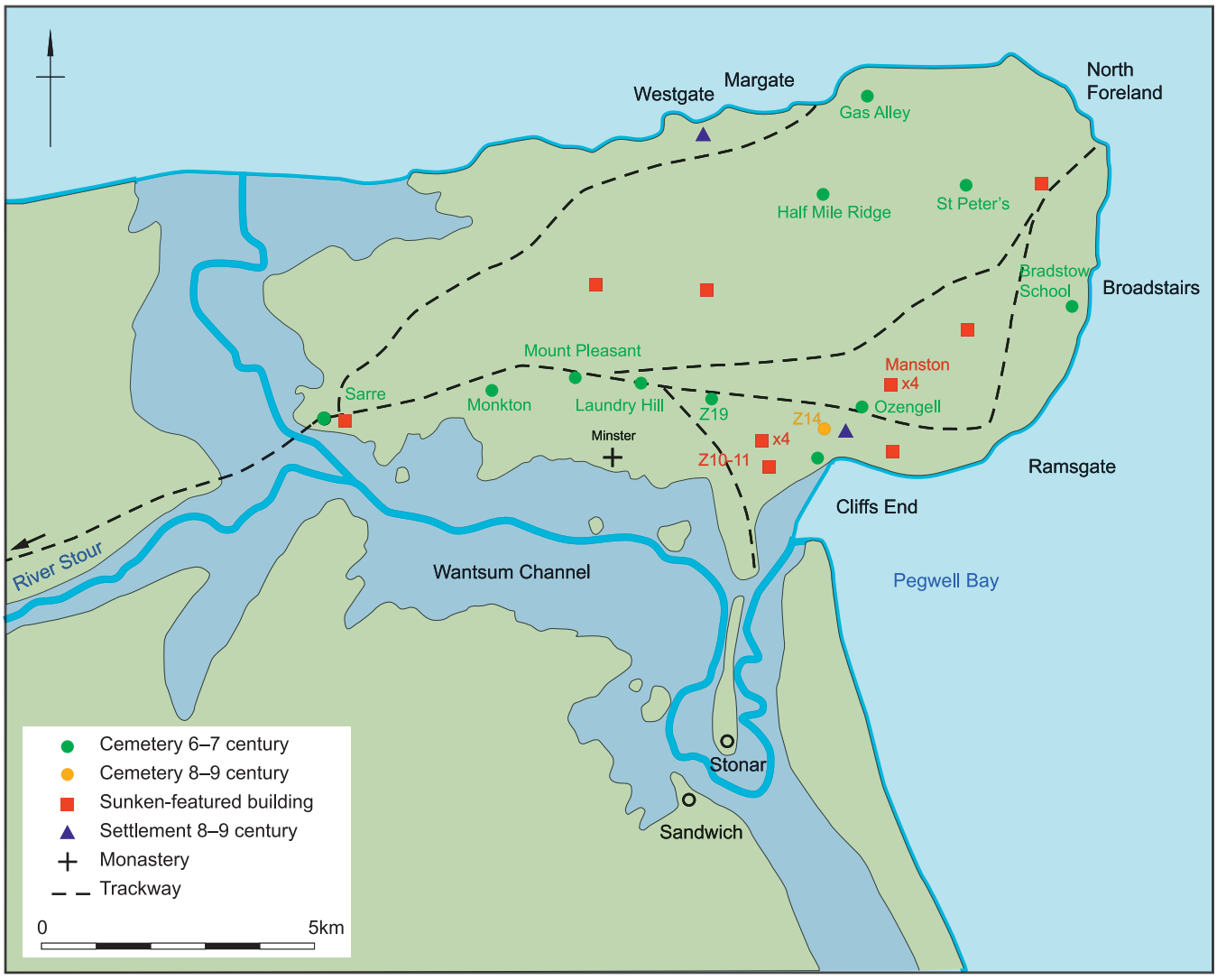


Fig 5.61 Principal Anglo-Saxon settlement and cemetery sites on Thanet, shown in relation to probable trackways (after Moody 2008, fig 95)

appears to have been a closer relationship between the living and the dead, and more examples have been discovered recently of small groups of burials within settlements, a relatively common occurrence in France, Netherlands and Germany (Zadora-Rio 2003).

Economy and environment

Amongst the environmental remains, it is the assemblage of marine shell which is probably of greatest importance, along with some animal bone and the small assemblage of charred plant remains, which together add considerable detail to our understanding of the economy of this rural settlement.

The shellfish remains from Zone 14 constitute a remarkable assemblage, substantially larger than that from any other zone or period on the EKA2, and perhaps the largest single group of mid-Saxon shellfish remains excavated nationally, including the wic sites. In this connection it is relevant to note here a smaller but comparable assemblage in the complex of mid-Saxon pits recorded earlier at Cliffs End Farm. This complex lay less than 500m to the south-west of the main concentration of shellfish remains in the western cluster of pits in Zone 14, and almost certainly belonged to the same phase of activity. Although the Cliffs End Farm material is thought to represent debris from local consumption (Wyles forthcoming), the Zone 14 assemblage is considered to be more likely indicative of a cottage industry which was probably related to a maritime trade in shellfish meat. Further shellfish remains, mainly oyster, were present at Oaklands Nursery (Trust for Thanet Archaeology 1998), and in the Kent Historic Environment Record there is an intriguing reference from 1992 (TR 36 SE 716) of two pits exposed in the cliff face on the north side of Pegwell Bay. One pit, measuring approximately 1m across and of similar depth, contained abundant shells in the lower fill (72% limpets in a 1kg sample), and produced a radiocarbon date quoted as AD 670–910. Shellfish remains were also abundant in the mid-Saxon pits at Lyminge, along with a profusion of fish bones (Brookes and Harrington 2010, 103), though it can be suggested that at Lyminge, an inland site, these remains represent local consumption.

In Zone 14 the shellfish remains were present in pits and the uppermost fills of earlier ditches, and it is very likely that these deposits were remnants of a wider spread of midden material subsequently removed by ploughing. The shellfish deposits in the western area were apparently associated with two stone-lined hearths, suggesting that some were preserved by drying/smoking rather than salting or pickling in brine. Although no hearths were found at Cliffs End Farm, there was a considerable quantity of local sandstone, much of it burnt and found in association with the shellfish remains. Notches were noted on a large number of oyster shells, and several iron knives and whetstones from Zone 14 are likely to have provided the kit for opening the oysters while still alive. In addition to oysters, there were large deposits of mussels, periwinkles, limpets, whelks and red whelks, both in individual dumps and occurring together, which appear to have been carefully selected and sorted. At Cliffs End Farm periwinkles comprised more than two-thirds of the assemblage, with oysters making up only 10%. There is no evidence to suggest managed oyster beds, and most of the shellfish were probably collected locally, very likely between autumn and early spring.

By comparison, the assemblage of Saxon fishbone (all from Zone 14) is surprisingly modest, with herring the principal species represented, along with mackerel, cod, eel and a rare occurrence of anchovy. In contrast, at Cliffs End Farm, abundant fishbone, dominated by cod and herring/sprat (Grimm and Higbee forthcoming), indicates that fish formed a significant element of the local diet, unless some was preserved and traded. The evidence indicates that a variety of fishing methods were employed, perhaps varying according to season and the type of fish targeted, and all of the recorded taxa could have been caught locally, in the nearby coastal waters of the Strait of Dover, the Wantsum Channel and the Thames Estuary.

Sheep/goat dominated the domestic mammal assemblage by fragment number, as they did at Cliffs End Farm (Grimm and Higbee forthcoming) and in the 7th-century deposits at Manston Road, Ramsgate (Hamilton Dyer 2009, 233), although cattle is normally the most common species in rural assemblages. This predominance of sheep is likely to reflect the extent of chalk grassland on Thanet, more suited to grazing sheep than cattle, the latter likely to have been grazed on the damper pasture and marshland adjacent to the Wantsum Channel. Although the sample size is limited, sheep slaughter patterns do not appear to indicate any particular specialisation on dairy products, wool or meat, which contrasts with the 7th-century assemblage from Manston Road, Ramsgate, which indicates an emphasis on meat production (Hamilton Dyer 2009, 233). At both sites, however, cattle through their larger size would have supplied the greatest quantity of meat, in addition to dairy products and providing a source of traction.

The charred plant remains provide some evidence of the arable economy, with free threshing wheat present, having largely replaced the glume wheats of earlier periods, rye much more common, reflecting the influence of northern European agricultural practices, and hulled barley continuing to be cultivated. The absence of pulses is more likely to be because of different processing requirements, resulting in their under-representation, as was also suggested for the 7th-century deposits at Manston Road, Ramsgate (Hinton 2009, 234), although pea was present amongst the mid-Saxon remains from Cliffs End Farm (Stevens forthcoming). A well-preserved deposit of barley found in association with some possible kiln debris may provide evidence for on-site crop processing and thus a small insight into the nature of the settlement, and barley was the main crop represented at Cliffs End Farm. From some of the weed seeds recovered it is possible to infer the cultivation of heavier clay soils for perhaps the first time in this area, evidence for which was also found at Cliffs End Farm and Manston Road, Ramsgate (Hinton 2009, 236).

The charcoal remains, predominantly blackthorn and hazel, show that these species provided a major source of fuel, and indicate the exploitation of scrubby or marginal woodland and more open areas which are likely have characterised much of the EKA2. These, as well as some other species, are also likely to have occurred in hedges. The presence of some oak, field maple and, unusually, beech suggests that some stands of trees remained, despite widespread clearance, with place-name evidence indicating that the main stands were in the north-west and south-east of the island (Everitt 1986; Moody 2008, 171–2). Oak may also have grown along the margins of the Wantsum Channel, but wetland species such as willow and alder were absent from the assemblage.

The wider picture

From the mid-7th century onwards settlements which engaged in trade with northern France and the Low Countries grew up along parts of the southern and eastern coasts of England, or on rivers which provided easy access to these coasts. The regularity and level of continental trade is unclear, and has probably been overestimated in the past, but the number of identified sites with continental pottery, glass and other imported finds has increased over recent years, largely reflecting the increase in the level of fieldwork undertaken and the large number of metal detecting finds, especially coins, recorded through the Portable Antiquities Scheme. In particular, our understanding of the size, layout and status of these trading sites in what was an expanding hierarchy of settlements has become far better understood, with the development of this hierarchy in part reflecting the founding of minster churches and the establishment of royal estate centres (Welch 2007, 189). As far as is known, Kent had no major trading or 'wic' settlements to rival those at London, Southampton, Ipswich and York, but it did have a relatively large number of smaller settlements, which in the east of the county comprised those at Dover, Seasalter, *Sandtun* (close to Folkestone) and Sturry/Fordwich near Canterbury, as well as several close to or actually on the Isle of Thanet itself, at Sandwich, Richborough, Reculver and Sarre (Cowie *et al* 2001, 85; Brookes 2003; Brookes and Harrington 2010, 82–7). However, apart from *Sandtun* (Gardiner *et al* 2001), a seasonal beach market and fishing site, there is relatively little archaeological evidence for these settlements, and several, including Sarre (Perkins 2001b), are known almost exclusively from place-name or limited documentary evidence.

Eighth-century documents also provide records of trading privileges granted to Kentish religious houses, including that at Minster-in-Thanet (Kelly 1992; 1995), which are also likely to have had some involvement in continental trade. The monastery at Minster was founded in 670 by Aefa, grand-daughter of King Aethelbert (died 616–8), the first Christian ruler of Kent, and the original land grant appears to have been an estate called North Minster (Brooks 1991), possibly on the rising ground close to the Chalk ridge. However, the monastery moved closer to the Wantsum in the 8th century under Abbess Edburga, where it was well placed to exploit maritime trade using the sheltered waters of the Wantsum Channel to access the Thames estuary, rather than going around the North Foreland (Brookes 2007a, 67). In this location, Minster possibly operated as a seasonal trading port (Riddler 2004), and it may also have held rights over tolls at nearby Sarre though there is no documentary evidence to substantiate this (Moody 2008, 169).

As noted above, the only continental imports from the mid-Saxon settlement(s) in Zone 14 and at Cliffs End Farm are a small quantity of lava quernstone fragments and probably a single sherd of glass. This paucity of material is not surprising as imported luxury goods were rarely traded or re-distributed into the hinterland of the 'wic' settlements. The Ipswich Ware on the other hand represents a regional import, coming from East Anglia, and Blinkhorn (1999) has identified that storage jars and pitchers in this distinctive, wheel-thrown fabric form a bigger proportion of site assemblages outside Ipswich because the jars were used as containers for traded items (eg, honey, and perhaps shellfish here) or, in the case of pitchers, to fill a gap in the functional range of locally produced pottery. Ipswich Ware occurs on all types of settlements, from high status estate centres and monastic sites to rural farming communities (Blinkhorn 2012). In Kent, which had engaged in cross-Channel trade relatively early in the post-Roman period, the redistribution of this pottery to lower status sites is likely to have taken place via Canterbury, coastal sites, market centres and seasonal fairs or, as may be the case for the Zone 14 settlement, through a nearby ecclesiastical site, in this case at Minster. The absence of coins from Zone 14 is echoed in their rarity on other sites of similar, rural status, and can be attributed to trade by barter rather than monetary exchange, though the relatively large-flan pennies are less likely to have been lost than the smaller, earlier sceattas. It is appropriate to reiterate here how rare such rural mid-Saxon sites are in Kent compared with, for example, East Anglia. However, one broadly comparable site can be cited from the High Speed 1 excavations at West of Boarley Farm close to the Medway Valley, where probable mid-Saxon agricultural and settlement activity are represented by a concentration of pits, postholes (which formed no coherent plans) and possibly several ditches (Reynolds 2011, 378–9).

Ipswich was involved in significant trade from around the second quarter of the 8th century, when Ipswich Ware first appears in London, and this period broadly corresponds with the suggested date for the establishment and growth of the Zone 14 settlement. The ecclesiastical site at Minster may have been directly linked to the wic site at London through cross-Channel trade passing via the Wantsum Channel and Sandwich to Quentovic in northern France, and documents record that Minster owned three trade ships which were given toll remissions (ie, they were exempt from taxes) in London, as were ships from Reculver and Rochester (Kelly 1992, 4). Early ecclesiastical sites such as Minster were often wealthy as a result of land rents and the produce generated from their estates, and they also had the ability to generate surpluses of cereals, meat, cloth,

iron and salt, for example, for trade, which included the provisioning of the larger wic sites. An illustration of this is provided by recent excavations on the outskirts of Ely, Cambridgeshire, which have produced evidence for relatively intensive agricultural production likely to have been associated with the ecclesiastical site there (Mortimer *et al* 2005).

In this context, the shellfish remains from the Zone 14 settlement and Cliffs End Farm might be seen as indicative of a cottage industry which was probably related to a maritime trade in shellfish meat, this trade possibly taking place through nearby Minster Abbey, or perhaps under direct royal control via the putative wic at Sandwich, or what may have been a seasonal trading site at Sarre. The apparent focus on shellfish meat is characteristic of an increasing specialisation of production in the rural economy at this time, with perhaps more than a single settlement in this part of Thanet exploiting the same resources and economic niche. It may be significant in this respect that other pits containing shellfish remains have been found on Cottington Hill and also at St. Mildreds Bay on the north side of Thanet (Moody 2008), though the scale of any processing activity is unclear.

In the case of Norfolk, Hamerow (2002, 150) has highlighted the evidence for several lower order sites engaging in specialist meat and salt production, probably for producing a surplus of salted meat for trade, perhaps under the aegis of a nearby estate centre under royal control. In the same county, Davies (2010) has emphasised the complexity of mid-Saxon settlement hierarchy which has emerged as a result of excavation, fieldwalking and metal-detecting over the past two decades, and the results from the Zone 14 and Cliffs End Farm have begun to hint at a similar complexity in Thanet and the adjacent area of Kent.

It is possible that the settlement in Zone 14 continued into the early 9th century, and the finds evidence at Cliffs End Farm is rather more convincing, though there is no reason why both should have been in use over exactly the same period. What led to their demise is not certain, but the Viking raids which commenced early in the second quarter of the 9th century in Thanet are likely to have disrupted trading routes and impacted on the abbey at Minster (see below), even if they did not directly affect the smaller rural settlements.

Late Saxon

Evidence for late Saxon activity is extremely sparse, the excavated remains restricted to a small group of pits in Zone 17. These pits contained pottery of late 10th–mid-11th-century date and suggest settlement nearby on the south-facing slope below the Chalk ridge, but no structural remains were found. Indeed, this was one of the 'quietest' areas on the EKA2, with no other features apart from several small Late Iron Age ditches and a complex of post-medieval chalk quarries. A coin of Aethelred II (*c* 997–1003) is the only other definitely late Saxon find from the route, and perhaps not coincidentally this came from Zone 11, immediately to the south of Zone 17.

Salvage work in the early 1980s, during the installation of a gas main through Zones 19 and 20, recovered a small assemblage of late 10th–early 11th-century pottery from topsoil or subsoil around the junction of the two zones, but no further late Saxon pottery or features was found in this area on the EKA2. However, it is likely that the mid-Saxon trackway recorded in Zones 19–20 (see above) continued in use beyond the end of the 9th century, providing an east to west route just below the crest of the Chalk ridge, and possibly also linking to the abbey at Minster. A horseshoe and a few items of probable medieval date were recovered from the upper fills, and perhaps this trackway formed part of an Anglo-Saxon precursor to medieval *Dunstrete* which ran along the Chalk ridge (see below).

More generally, archaeological evidence for late Saxon settlement on Thanet is also rare, probably because much of this evidence is to be found beneath existing village centres where there has been little opportunity for excavation. Similarly, but unsurprisingly given it is commonly the case elsewhere, there is no archaeological evidence for the documented Viking raids on Thanet which began around AD 830 and continued into the early 11th century. Sandwich was raided in 851 and this was the first time, as far as is known, that the Vikings overwintered in Britain, staying on the Isle of Thanet (Lawson 2004, 32). The monastery at Minster is very likely to have been attacked and perhaps burnt, possibly at this time in the mid-9th century, when it is absent from the documentary records. Two centuries later, by the time of the Norman invasion, it had been rebuilt, perhaps on a new site, and its lands had been taken over by the Abbey of St Augustine, Canterbury (Quested 2001). Sacked again shortly after the Norman invasion, Minster Abbey recovered and in 1086 the *Domesday Book* records that Minster had 150 villagers and 50 smallholders, a church and priest, a salt house, two fisheries and a mill in the lordship of the Abbey of St Augustine.

Dating, finds and environmental summaries

Radiocarbon dating *by Alistair J Barclay and Chris J Stevens*

Three radiocarbon measurements (SUERC-40306–8) were obtained on human bone from selected burials in the Zone 14 Anglo-Saxon cemetery. All three returned calibrated date ranges that fall within the mid-Saxon period (Table 5.1 and see Vol 2, Fig 21.12).

Metalwork *by Ian Scott*

Anglo-Saxon metal finds are almost exclusively divided between material from settlement contexts in Zone 14 and cemetery-related material in Zones 19 and 20. References in the text below are to numbers in the Zone 14 catalogue of metal objects in Volume 2 (for objects from settlement-related contexts), while objects from

Table 5.1 Radiocarbon dates obtained for Anglo-Saxon features

Laboratory code	*Feature and context*	*Material identification*	*Radiocarbon age (BP)*	*$\delta^{13}C$ (‰)*	*$\delta^{15}N$ (‰)*	*C:N ratio*	*Calibrated date (95.4% confidence)*
SUERC-40306	Grave 176043 (176044)	Human bone, right femur	1315±30	-20.1	9.5	3.2	cal AD 650–780
SUERC-40307	Grave 176055 (176056)	Human bone, left clavicle	1300±30	-18.9	9.6	3.2	cal AD 660–780
SUERC-40308	Grave 223031 (223033)	Human bone, right femur	1285±30	-19.7	9.9	3.1	cal AD 660–780

graves are referred to by object number (ON) as in the grave catalogues in the narrative text above.

Zone 14

Mid-Saxon settlement

There are 49 objects from contexts of mid-Saxon date in Zone 14. These include a draw knife (Cat. No. 3), a fragment of probable shears blade (Cat. No. 4), a tanged awl (Cat. No. 6) and a bell clapper (Cat. No. 9); there is second bell clapper (Cat. No. 10) from an unphased quarry pit. The clappers are probably from cattle or sheep bells. The draw knife is an Anglo-Saxon form with handles attached by nails or rivets. The only personal items are a hooked tag (Cat. No.19) and an iron girdle hanger (Cat. No. 22). The most common single type of find are knives, with 11 being recovered, ten from pits (Vol 2, Table 3.15) and one (Cat. No. 35) found in Grave 136059. The latter and the knives from pits (Cat. Nos 26, 29–34, 36, 37 and ON 534) are Anglo-Saxon types. The uncatalogued knife (ON 534) is fragmentary and its form is uncertain. There are further Anglo-Saxon knives (Cat. Nos 27, 38–40) from unphased contexts (including colluvium) in Zone 14. To these can be added Cat. No. 41, a long narrow knife of uncertain type, but possibly Anglo-Saxon, again from an unphased feature. There is a knife tang (ON 532) from another Saxon pit (context 202051). The only other household item is a bucket handle (Cat. No. 42) from pit 279003.

Apart from the knives the finds from Saxon features are comparatively limited in numbers and range of types of object, comprising two bindings, a small number of nails and nail fragments, miscellaneous bits of bar, rod, strip and plate and some pieces of uncertain identity including a possible fragment of iron vessel or shield boss rim (Cat. No. 50) and a length of bar hooked at one end and looped at the other end (Cat. No. 51).

Unphased finds include an awl (Cat. No. 7), and a late Saxon strap end (Cat. No. 18) and Anglo-Saxon hair pin (Cat. No. 20) were recovered from context 133109, a mixed and probably redeposited layer including Roman finds.

Zone 19

Northern cemetery

The northern cemetery in Zone 19 had 18 graves with metal finds, and seven burials with no metal finds. Nine of the graves with metal finds contained either single or very limited numbers of objects: Graves 126091, 126183, 153034, 153058, 166116, 220011, 251044, 251061 and 266018.

The remaining nine graves were all accompanied by a number of grave goods. Graves 153075, 153084, 166105, 220095 and 220109 were burials of adult females, Graves 166102 and 209243 were burials of adult males and Grave 166141 contained the redeposited remains of an adult of indeterminate sex aged at least 18 years. The final burial (grave 136111) contained the skeletons of an adult female aged *c* 18–25 years, and two juveniles or subadults *c* 12–14 years old. Most of the grave goods are of indeterminate date, with few items that are specific to gender; in particular, knives appear in both male and female graves.

Grave 136111 with three burials has a number of grave goods including a whittle tang knife (ON 2028), a strike-a-light or fire steel (ON 2027) and a socketed point (ON 2029) (Figs 5.9–10). The latter has a split socket and tapered head of rectangular section. The cross-section suggests that this may not have been a weapon, or that it was small unfinished weapon head. Other finds include a plain iron buckle and buckle plate (ON 2019) of later 7th-century date, a tongue-shaped hinge plate (ON 2019) of 7th-century form, and a possible small padlock case in copper alloy (ON 2058). The presence of the latter may hint at a late 7th-century date, and a single Series B sceat accompanying one of the burials confirms a late 7th- or early 8th-century date for Grave 136111. Personal items include wire links with looped ends that may be girdle links (ON 2027–2028) and a small long brooch (ON 2018), which is potentially an early, 5th–6th-century form. The latter in this context probably represents an heirloom, and this may be reflected by the hinged pin being missing. A small cast rectangular plate in copper alloy with interlaced ribbon decoration (ON 2020) is of uncertain function, and there is no obvious means by it could have been attached. This grave also contained the remains of a small cylindrical container or work box (ON 2056), which is likely to date from the later 7th century. Also accompanying the burials were five complete rivets formed from clench nails and lozenge-shaped roves and one incomplete rivet (ON 2045–2050). This is one of a number of graves in Zone 19 with clench nails and roves or bits of clench nail and rove.

All the adult female burials were accompanied by whittle tang knives. Two of the adult female burials (graves 153075 and 153084) contained pairs of shears (ON 2067 and ON 2092) as well as whittle tang knives (ON 2064 and ON 4694) (Figs 5.14–5). Grave 153084 also had another possible blade fragment found with the shears (ON 2092), and a small fragment of copper alloy wire. Grave 153075 had fragments of necklace rings (ON 2070) and a copper alloy object with a cruciform

Pl 5.19 Copper alloy object with cruciform head, from grave 153075 (Zone 19)

head, flat rectangular body and long tapering point (ON 2068, Pl 5.19). The date and origin of this piece are uncertain, and its precise use is not clear, but it could have served as a weaving tool, possibly as a thread picker, and the presence of a pair of shears in the grave may support an association with textile production. No precise parallel has been found, but a similar object with a decorated rather than plain body was found at Finglesham (Geake 1997, 60, fig 4.18; Hawkes and Grainger 2006).

The burial in grave 166106 was accompanied by a whittle tang knife and blade fragment (ON 2034 and 2035), a fragment of a possible necklace ring (ON 4446) and fragments of iron rod and bar (ON 2036–2038) (Fig 5.18). Grave 220095, in addition to a more or less complete whittle tang knife (ON 1234), also contained a second fragmentary knife (ON 4672), and a clench bolt and rove (ON 2065) (Fig 5.24). The final adult female burial (grave 220109) had a whittle tang knife and a number of fragments of looped iron links with copper alloy figure-of-eight links or loops (ON 3430–3436, 3448–3449, 4691), which probably formed a girdle or waist belt (Fig 5.25).

One of the two adult male burials (grave 166102) was accompanied by a seax (ON 1291), and an inlaid iron buckle with oval buckle frame and hinged buckle plate (ON 1296) (Fig 5.17). The buckle probably dates to the 6th or early 7th century. There is also a tiny oval copper alloy buckle frame (ON 2001) and a small strap end (ON 2006). The strap end probably dates from the 6th or early 7th century. The inlaid buckle and small strap end, and possibly also the small copper alloy buckle, form the fittings for the belt for the seax. Other finds include a lock bolt plate (ON 2008) of the kind found in 6th- and 7th-century graves, and a whittle tang knife blade (ON 1295). A second whittle tang blade is parallel-sided and has a square end with rounded corners (ON 2010), an unusual form of blade presumably made for a particular purpose. There are numerous other miscellaneous metal fragments from the grave.

The second male burial (grave 209243) was accompanied by a whittle tang knife (ON 3609) and a plain copper alloy buckle with oval frame and simple rectangular plate secured to the belt by three rivets (ON 3497–3498) (Fig 5.22). The latter probably dates to the later 7th century. The most unusual feature of this grave was the presence of 16 complete rivets or clench bolts and two fragments (ON 3485–3495, 3600–3605 and 3607). The appearance of clench bolts in Anglo-Saxon graves in Kent is a well-known phenomenon recently discussed by Brookes (2007b). In many instances it is clear that the presence of clench bolts indicates that sections of planking were present in graves, sometimes as part of the grave structure but often just laid in the grave (*ibid*, 3–6). In other cases where only small numbers of rivets have been found in graves it is unlikely that they represent the presence of sections of planking (*ibid*, 7). The distribution of graves with boat rivets concentrates very much towards the eastern end of Kent, with a particular concentration on Thanet (*ibid*, fig 3). Graves with boat rivets date to the 6th and 7th centuries. Other examples of graves with clench bolts or rivets have been identified in Zone 19, all in the Northern cemetery. Graves 153075, 166116 and 220095 were the burials of adult females and contained one rivet or, in the case of 133075, two rivets. Grave

136111, the triple burial of adult female and two juveniles had six rivets, including five complete examples. The only adult male burial was 209243 with 18 clench nails and roves. The remaining feature with boat rivets was grave 252037, on the south-west side of the cemetery. This feature produced no skeletal remains but contained numerous structural elements comprising seven L-shaped corner bindings or reinforcements (ON 1931, 1933–1935, 1937, 1941 and 1944), three clench bolts or rivets (ON 1800–1802) and 21 nails, along with miscellaneous binding strips (there are also numerous irregular fragments of iron sheet and plate).

Grave 166141, of an indeterminate adult, contained two small strap ends (ON 3432 and 3429) of 6th- to early 7th-century type (Fig 5.21).

In addition to the grave finds a copper alloy buckle with an elongated oval frame and fixed, perforated plate (ON 1208) came from layer 126095 overlying the cemetery. This layer contained finds of mixed date, but the distinctive form of buckle can be assigned to the late 7th and 8th centuries.

Broadly, the datable finds from the Northern cemetery suggest that the graves date to between the late 6th and late 7th/early 8th centuries.

Southern cemetery

There are 13 graves containing metal finds, and four graves with no metal finds. One burial of a possible female adult (grave 171168) stands out as particularly rich (Figs 5.31–3). Most of the burials with grave goods seem to be of adult females. There is one possible adult male burial (grave 286013), apparently redeposited, and one certain adult burial in a stacked grave with an adult female (grave 218206). There are three graves (189174, 189178 and 250050) with unsexed adult burials.

The only finds associated with grave 216004 are a group of at least five wire links with looped ends (ON 2409) (Fig 5.37). The links, which appear to join end to end, would seem to form part of girdle or waist belt rather than a chatelaine. Grave 280022 contained a decorated copper alloy buckle (ON 2416) of 7th-century type, and a whittle tang knife (ON 2418) (Fig 5.41). Grave 228044 produced a pair of plain copper alloy tweezers (ON 2405), a small copper alloy buckle (ON 2414), a whittle tang knife (ON 2406) and the probable tang of a second knife (ON 2408) (Fig 5.39). Grave 205115 had a whittle tang knife and three lengths of bar or rod (Fig 5.36). Two of the pieces were of square section and tapered to each end; the third piece was circular in section and tapered to a blunt point. These pieces may have been tools.

Grave 171168 contained a possible female adult accompanied by numerous grave goods (Fig 5.31–3). A probable bag ring (ON 1816) was found with a number of small iron loops and rings and was associated with a bundle of keys and other rod like items (ON 4707). These included two possible keys and a rod with a barley-sugar twist. The bag ring and keys were found with traces of mineralised textile, possibly from the bag. Another group of finds comprises a probable chatelaine with at least one lift key and three possible girdle links. There is a pair of shears (ON 1868) associated with a whittle tang knife (ON 4703) and part of a bone comb and case (ON 4704), complete with copper alloy slide and chain. The bone comb is comparable to an example from the Buckland cemetery Grave 110/8 (Evison 1987, 119–20, text fig 24, fig 49: 110/8), dated to the end of the 7th century. The presence of shears suggests a late 7th- or even early 8th-century date. Individual finds include part of a silver scutiform pendant (ON 1835) of possible 7th-century date, a copper alloy finger-ring with a coiled wire bezel (ON 1838) and five complete necklace rings (ON 1837, 1844–1845, 1873, 4763). There are a number of possible girdle links of flattened oval section with wire loops at each end (ON 1853–1865), and a well-preserved lock bolt plate (ON 1871). Other finds include three tiny copper alloy hooked catches (ON 1876–1878).

The only grave goods in grave 286013 were a fragment of a blade with curved back (ON 1888) and a fragment of a possible looped girdle link (ON 1889) (Fig 5.43). The stacked grave 218203 contained only a knife blade with an angled back (ON 2415) but no surviving tang.

Grave 189174 contained an incomplete leaf-shaped spearhead (ON 2410), a whittle tang knife in three pieces (ON 2424–2425), a D-shaped buckle with buckle plate with three rivets (ON 2426) and a possible boot cleat (ON 4015) (Fig 5.34). The plain buckle (ON 2426) is a later 7th-century type. The spearhead has a long narrow split socket and an incomplete blade. The finds from grave 189178 include an incomplete whittle tang knife blade (ON 3044), a link formed from thick wire with a loop at each end (ON 3043), a nail fragment and some tiny fragments of copper alloy strip (Fig 5.35). Grave 250050 contained a shield boss (ON 2421) and a copper alloy sword pommel (ON 2412), suggesting that the burial was that of a male (Fig 5.40). There are also fragments of strip, including part of a possible scale tang, from the grave. The shield boss is of a low curved cone form with a narrow flange (Evison 1963, 40–41, fig 1, d) which Dickinson included with her Group 6 shield bosses (Dickinson and Härke 1992, 20), dated to the late 6th or 7th century (*ibid*, fig 16). The sword pommel is of elongated plain pyramidal or 'cocked hat' type, with metal pommel and upper hilt guard, this form dated by Bone (1989, 64, fig 5.3) to the late 6th and 7th centuries. A detached undecorated sword pommel of similar type came from Buckland, Dover (Parfitt and Anderson 2012, 428, fig 10.43, 360/e)

Finds from grave 286016 include a small leaf-shaped spearhead with a split socket (ON 2400) and a few fragments of copper alloy (Fig 5.42). Grave 218200 produced a small spearhead with broad leaf-shaped blade and split socket (ON 1831), a fragment of a plain buckle plate formed form folded copper alloy sheet (ON 1834) and two nail fragments.

The datable finds from the Southern cemetery suggest that the graves are of broadly similar date to those in the Northern cemetery and span the late 6th to late 7th/early 8th centuries.

Zone 20

Western cemetery

This small cemetery contained five graves with metal finds. They include two burials of adult females, graves 279039 and 267072. Grave 252076 contained stacked burials, with an adult female as the primary burial and a possible male adult as the secondary burial. Grave 217135 had only disarticulated bone fragments, and grave 282014 had redeposited scraps of bone.

Grave 267072 was the richest of these burials (Fig 5.46–8). The finds include a Kentish keystone disc brooch of Avent Type 2.4 (ON 2453) (Avent 1975, 24–29, figs 4–11), dated early–mid-6th century. There is also part of a silver scutiform pendant (from sample 7497), a probable annular copper alloy brooch (ON 2450), small edge binding fragments in silver (ON 2312, 2440) with remains of possible leather, and a copper alloy strap end with a split top and decorated with three ring-and-dot motifs (ON 2452). The strap end (ON 2452) is probably early–mid-6th century in date. The scutiform pendant could date from as early as the 5th century or as late as the 7th century, as could the annular brooch (ON 2450), though the form of this brooch suggests that it should be later rather than early in the date range, and scutiform pendants at Buckland, Dover are dated to the 7th century (Evison 1987, 55). There are two whittle tang knives (ON 2348–2349), a possible iron lift key fragment (ON 2441), and a possible chatelaine (ON 2443). There are also numerous possible girdle or waist belt links (ON 2444–2447, 2459–2463, 3500–3518, 2520–2521, 2523–2524, 2526).

Grave 279039 contained a small long brooch of unusual form (ON 2434) with a distinct cruciform head, down-curved lappets below the bow and a double-lobed foot, for which no precise parallel has been found (Fig 5.49). There is also an annular copper alloy brooch with an iron pin (ON 2436), broadly datable to the 5th–7th centuries, and whittle tang knife with long narrow blade (ON 2437). There were also small fragments of iron wire.

The stacked burials in Grave 252076 were associated with a spearhead with long angular blade (ON 2431), two whittle tang knives (ON 2430, 2484), three small iron buckles, one oval (ON 2429), one D-shaped and one circular (both ON 2484), and a small D-shaped copper alloy buckle (ON 2485) (Fig 5.45). There are also three small copper alloy clamps or staples (ON 2431), and an iron pin or spike of square section with neat rolled over loop (ON 2430). There are a number of miscellaneous pieces of metal including nails. The spearhead is of Swanton's Group H3 (large spearheads with angular blades) which he dated to the 6th century (Swanton 1973, 111–14) and which show a marked concentration in cemeteries in Kent (*ibid*, fig 42).

Grave 217135 contained just a possible small binding (ON 2449) of iron (Fig 5.51). Grave 282014 produced a large leaf-shaped spearhead with long split socket (ON 2479–2480) and two nail fragments (Fig 5.50). The spearhead belongs to Swanton's Group C3 of very large spearheads with leaf-shaped blades, dated to the 6th and 7th centuries (Swanton 1973, 55–9). Again there is a distinct cluster of this form of spearhead in Kent (*ibid*, fig 12).

The dating evidence, although slight, suggests that this small group of burials is earlier than the graves in the Northern and Southern cemeteries, with a probable date range covering the second half of the 6th century, but possibly extending a decade or two earlier and later of this period.

Pottery by John Cotter

The quantity of post-Roman pottery varies considerably from zone to zone, from just a few sherds, to a maximum of 596 (medieval) sherds in Zone 3 on the Ebbsfleet peninsula. There is a reasonable assemblage of early to mid-Anglo-Saxon pottery (mainly 6th–9th century), including material from a couple of sunken-featured buildings and from three graves, but the late Saxon period (*c* 850–1050) is only slightly represented.

There appears to be a fairly strong correlation between the three landscape units and the three main chronological groupings seen in the post-Roman pottery assemblage and this is unlikely to be purely coincidental (Table 5.2). This can be summarised as follows. The Chalk Ridge unit (Landscape 1) correlates with the early to mid-Saxon assemblage (*c* 450–750) and significantly includes all 11 examples of 7th–8th-century Merovingian vessels imported from north France plus other possible examples. The imported vessels provide a useful dating emphasis for most of the assemblage here (specifically *c* 575–750). Local coarsewares, mainly organic-tempered wares, are harder to date with accuracy and the scarcity of decorated pottery characteristic of the early Anglo-Saxon period (mainly 5th–6th century) suggests that this period is not so well represented on the Chalk Ridge and is virtually absent from the other two landscape units. The Pegwell Bay Spur unit (Landscape 2) correlates with an almost entirely mid-Saxon assemblage from a series of shell-rich pits on Zone 14 dated by the presence of Ipswich ware to the 8th–9th century (specifically *c* 720–850).

Most post-Roman Thanet pottery was, until the 19th century, relatively locally produced. Definite early Saxon (5th–6th century) material is rare from the EKA2 scheme but includes a decorated jar/bowl from a sunken-featured building on Zone 11 (Vol 2, Fig 10.1, 1). The commonest local Anglo-Saxon type is organic-tempered ware (EMS4, Vol 2, Fig 10.2, 11, 12, 13). This long-lived and fairly crude handmade type is difficult to date closely. Elsewhere it may date from *c* 450 onwards but in Canterbury and most of East Kent a core dating of *c* 575–750 is likely. The emergence of a distinct 'Canterbury sandy ware' tradition from *c* 750, represented by mid-Saxon Canterbury sandy ware (MLS2), brought about the demise of organic-tempered wares. Over time the Canterbury sandy ware tradition – represented in its last few centuries by the Tyler Hill ware industry (located 1.5 miles north-west of

Table 5.2 Summary of post-Roman pottery by zone and landscape (abbreviations: ESAX – early Saxon *c* 450–650, MSAX – mid-Saxon *c* 650–850, LSAX – late Saxon *c* 850–1050, EMED – early medieval *c* 1050–1250, HMED – high medieval *c* 1250–1400, LMED – late medieval *c* 1375–1525, PMED – post-medieval *c* 1525–1800)

Landscape	*Zone*	*No sherds*	*Weight (g)*	*EVEs*	*No. rims*	*Date range and comments*
Chalk Ridge	10	118	1989	0.75	9	ESAX, mainly MSAX incl 8 imported Merovingian vessels (4 from sunken hut), plus local copy
Chalk Ridge	11	69	711	0.72	12	ESAX (sunken hut), MSAX incl prob Merovingian vessel, some EMED
Chalk Ridge	17	37	665	0.48	7	Prob all LSAX incl imported Frankish sherd. Pit
Chalk Ridge	19	227	2428	2.65	19	MSAX incl 2 Merovingian vessels from graves. EMED. 1x prob 19C chicken feeder from WWII ditch
Chalk Ridge	20	7	59	0	0	HMED, LMED, PMED mainly 19C
Chalk Ridge	21	7	44	0.03	2	HMED, LMED, PMED incl 19C
Chalk Ridge	22	17	155	0.23	7	EMED, HMED, PMED all 19C
Chalk Ridge	23	21	251	0	1	EMED, HMED, PMED mainly 19C
Chalk Ridge	29	16	413	0	2	PMED mainly 19/20C
Subtotal		519	6715	4.86	59	
Pegwell Spur	14	153	6049	1.09	11	ESAX? Mainly MSAX pits containing much Ipswich ware. Includes complete spouted pitcher
Pegwell Spur	15	2	27	0	0	MSAX
Pegwell Spur	26	1	6	0	0	LMED
Subtotal		156	6082	1.09	11	
Ebbsfleet Pen	1	243	2061	1.26	23	1x ESAX? Mainly redeposited EMED & HMED (poss fisherman's hut?). Some LMED & PMED
Ebbsfleet Pen	2	126	3030	1.78	13	HMED, all 13-14C Tyler Hill ware. Agricultural hut?
Ebbsfleet Pen	3	596	9982	6.33	109	1x ESAX? Mainly EMED incl a few N. French imports. Some HMED (13C). Mainly from enclosure ditches & gullies
Ebbsfleet Pen	4	214	2131	2.03	28	Mainly EMED & HMED, rare LMED & PMED. Mainly from enclosure ditches, gullies and pits
Ebbsfleet Pen	5	22	411	0.29	2	LMED. Mainly from a well
Ebbsfleet Pen	6	25	191	0.2	3	ESAX, EMED, HMED, LMED, PMED incl 19/20C
Ebbsfleet Pen	9	7	46	0	0	ESAX, EMED, HMED
Subtotal		1233	17852	11.89	178	
TOTAL		1908	30649	17.84	248	

Canterbury) – gave rise to a series of fabrics or wares that supplied the whole of East Kent from *c* 750 to *c* 1525. The whole range of these is represented from the road scheme here – mostly present in the form of jar/cooking pots. MLS2 (*c* 750–850) only occurs on Zone 14 in association with Ipswich ware (see below). Late Saxon sandy ware (LS1 *c* 850–1050) is rare here but a small group of pots of *c* 975–1050 occur in a pit on Zone 17.

Against this background of local wares East Kent's long coastline gave it access to imported pottery from the Continent and also from a few regional English sources. Imports, however, were only relatively common on the coast and Thanet's insular (and later peninsular) nature and proximity to the Continent exposed it, at times, to a higher share of imports than most other areas of Kent. Most significant here are a class of high quality wheel-thrown vessels produced during the Merovingian period in north France/Flanders and datable to *c* 575–750. These are often in the form of biconical jars or tall bottles and often bear rouletted decoration (Vol 2, Fig 10.1, 2–10). The 11 definite examples here come from two graves on Zone 19, a sunken-featured building on Zone 10 and from pit and ditch fills on Zones 10 and 11. These vessels are relatively common from Anglo-Saxon cemeteries in East Kent and are particularly characteristic of Thanet. One example from a grave is complete and in perfect condition and looks unused (Fig 5.15, ON 3438). Another grave pot belongs to a sub-group of finer jars dated *c* 630–670/700 (Fig 5.18, ON 2040). It has been suggested that these imported vessels may have been used as accessories (and perhaps status symbols) for the consumption of imported French wine – hence their inclusion as valued grave goods (Evison 1979). However, increasing numbers are being recognised from domestic contexts, including four examples from the Zone 10 SFB some of which show evidence of sooting from use as cooking or heating vessels.

Of similar significance is the regional import known as Ipswich ware (MLS7A and B). This, the first wheel-turned pottery made in England since the Roman period, was made at Ipswich (Suffolk) during the period *c* 720–850, but its local dating is mainly from *c* 750/75. It is fairly common along the north Kent coast, particularly at Canterbury and at Minster-in-Sheppey. It also occurs,

though less commonly, on the south coast at Dover and Hythe near Folkestone. Its relative commonness in north Kent may be due to the trading interests of the early minsters at places like Canterbury and those at Minster-in-Sheppey and perhaps Minster-in-Thanet. All of the Ipswich ware from the EKA2 scheme occurs on Zone 14, near Cliffs End, where it came from mid-Saxon rubbish pits. These contained large quantities of shellfish which appear to have been processed on-site. It is present here in the form of several fragmentary jars/cooking pots and a virtually complete (if worn-out) spouted pitcher (Vol 2, Fig 10.3, 20) similar to an example from nearby Richborough Castle. After Canterbury and Minster-in-Sheppey, the 65 sherds (19 vessels) here constitute the third largest assemblage of Ipswich ware known from Kent – and all the more remarkable perhaps as they come from a single site. Their presence here suggests that this location was of some importance during the mid-Saxon period – perhaps as some kind of trading entrepôt or food-processing site under the aegis of the nearby abbey at Minster-in-Thanet. Most Ipswich ware vessels were sooted from use but whether they had any connection with the processing, storage or trading of preserved shellfish remains a matter of speculation. Aside from this the presence of Ipswich ware lends a closer dating to associated local coarseware types.

Fired clay *by Cynthia Poole*

The fired clay from this phase formed the largest phase group (2139 fragments, 49.55kg) accounting for about a quarter of the assemblage. The bulk of the fired clay from this period was found in Zone 14 with less than 0.5kg from other Zones (9, 10, 11, 15, 19 and 20) apart from the floor surface from a hearth (197092) in Zone 9 from which 2.5kg of fired clay was recovered including a fragment with an impressed line, possibly decoration (Vol 2, Fig 12.11, 1). The assemblage was dominated by oven and hearth structure, especially wattle impressed fragments, with two large groups recovered from pits 202100 (12.3kg) and 202128 (16.5kg). These both produced very similar material consisting entirely of fragments covered with interwoven wattle impressions probably from flat panels forming drying floors (Vol 2, Fig 12.11, 4–5). A few pieces were lightly vitrified or had cerise mottles that might indicate the presence of salt, though this may result from the use of salt-marsh clays rather than salt production. It is possible they served as drying platforms for the large quantities of shellfish recovered from the area, but a more direct association is the large amount of carbonised grain in the same pits suggesting the fired clay in fact formed the drying floors of crop processing kilns. Similar material was found associated with an Anglo-Saxon crop processing oven at Springhead (Poole 2011c, 40–1). Oven or hearth furniture was extremely sparse, with a single example of a hand-squeezed lump (Vol 2, Fig 12.13, 33), the rounded end of a firebar and a piece moulded to a small rounded knob (Vol 2, Fig 12.12,27), possibly a support or stabiliser.

Worked stone *by Ruth Shaffrey*

Zone 14 was the only zone that produced worked stone from Anglo-Saxon contexts. This includes 6.7kg of worn lava (272 fragments), which could be residual from Roman activity, but much more likely to represent Anglo-Saxon imports, either of complete rotary querns or unworked or partly worked stones requiring finishing. Four other items comprise a Greensand saddle quern (ON 511), two possible hones (176071, 139087) and a possible rubber (202103).

Miscellaneous finds *by Sue Nelson*

A total of 342 beads (286 glass, 44 amber, five amethyst quartz, two rock crystal, three gypsum, one worked bone, and one reused vessel glass), all of Anglo-Saxon date, was recovered from 16 graves in Zones 19 and 20. Over two-thirds of the monochrome glass beads, three-quarters of the polychrome glass beads and almost half the amber beads were recovered from a single grave, all but two of the remaining graves containing nine beads or fewer.

With the exception of a single blue cylinder bead, possibly an heirloom, none of the beads definitely date earlier than *c* AD 530. During the 7th century the presence of amber beads in graves declines markedly, so the presence in two graves of groups of 17 and 18 amber beads respectively suggest, therefore, that they possibly pre-date *c* AD 600. The comparatively low numbers of polychrome beads in the assemblage as a whole, however, is indicative of a later date for most of the graves, as polychrome beads declined in number in graves from the 6th century onwards.

A further nine beads were recovered from Zone 14, comprising seven monochrome glass beads and two beads of amethyst quartz, found together in a pit of likely 7th–8th century date.

A small piece of reticella glass also came from a mid-Saxon pit on Zone 14. This fragment is of particular interest. It is from a very high quality vessel, possibly a bowl, with implications for the economic and social status of the site, and is unusual of both form and decoration. The workmanship is exceptional and it is almost certainly an imported vessel, but no direct parallel has yet been found in Britain or on the Continent. There are also two fragments of vessel glass from Anglo-Saxon graves in Zone 19, one probably from a beaker, pierced and reused as a bead or amulet, and the other too small to be diagnostic.

A single shale object was recovered from an Anglo-Saxon grave in Zone 19, its ovoid, undiagnostic form currently unparalleled. Nevertheless, it seems more likely that it is a curated Iron Age or Roman rather than Anglo-Saxon artefact.

All six bone or antler artefacts from Zone 19 came from Anglo-Saxon graves. Three of the objects are fragments of composite antler combs, one single-sided and two double-sided. The surface of all these combs is badly degraded so any decoration that was once present

has disappeared. The three other objects comprise a pin beater, a bead and several flat fragments of antler, perhaps decorative plates from a box. Four further objects came from domestic contexts on Zone 14 and include a pin, an awl and side-handled comb.

A small amount of iron slag indicates limited smithing activity on or in the vicinity of Zone 14.

Human bone by Kirsten Egging Dinwiddy

The human bone is summarised in Table 5.3, see Vol 2, Chap 13 for full details.

Animal bone by Lena Strid

The Anglo-Saxon assemblage came mainly from Zone 14. The most common animal was sheep/goat, closely followed by cattle. However, cattle would have contributed most to the diet, due to its larger size. Other animals that formed part of the diet include pig, hare, domestic fowl, goose and unidentified passerine. Horse, dog, cat and rabbit were also present among the assemblage. The rabbit bones are probably intrusive, since the Roman population was not large enough to sustain itself in the wild and rabbit was re-introduced to Britain in the later 12th century. The buzzard was found in the main fill of pit (166068) and may represent a ritual deposit.

The cattle slaughter pattern shows two peaks: young cattle in their first or second year and mature cattle. The sheep/goat data show a much wider spread of age-at-death, but with peaks at 6–12 months and 2–6 years. The young animals would have been surplus animals slaughtered for meat, whereas the mature cattle and sheep/goat would have been past their prime as breeders, draught animals, dairy producers or wool producers. The pig remains are few but most or all were slaughtered prior to full skeletal maturity at the age of 2.5 years. This is a common pattern in pig husbandry due to their high fecundity, fast growth and lack of secondary products.

There is a scarcity of horn cores from female sheep which suggests that the majority of the ewes may have been hornless, a natural trait possibly deliberately bred for, since horned sheep can damage their fleeces while scratching themselves or fighting.

Fish remains by Rebecca Nicholson

The great majority of fish remains (Table 5.4) came from feature fills phased as Anglo-Saxon, and mostly from the mid-Saxon period. All came from Zone 14 on Foads Hill, the deposits here probably datable to *c* 720–850. Although fish appear to become more popular during the mid-Saxon period, their remains are perhaps less common than might be expected given the proximity to the coast and the clear focus on other marine resources, notably shellfish. A diverse range of fish is represented, with clupeids (mainly herring), cod and eel particularly frequent and mackerel also relatively common. A possible pike palatine provides the only indication of an exclusively freshwater fish.

The evidence indicates that a range of fishing methods was used, probably varying seasonally to target migratory taxa such as eels and herring, but there is no good evidence for fishing beyond coastal waters. The majority of a large cod of around 1m length, together with the partial remains of at least three other smaller cod and isolated remains from a small flatfish, probably flounder, herring and sea bream came from fill 202022 in pit 202021. This fill also included fragments of crab and tiny vertebrae from clupeids, flatfish, sand eel and, unusually, anchovy.

Although the remains of very large cod and haddock were recovered, they were not particularly numerous and could probably have been caught from small boats operating in the North Sea, at a time before fish stocks had become depleted by centuries of fishing targeting these species. Mature cod and haddock are found inshore more commonly in winter, but small gadids such as whiting, rays and flatfish, including plaice and flounder, would have been available in coastal waters for much of the year and could have been captured using fixed nets, traps or baited hooks. Anchovy, gurnards, sea bass, sea breams, sole, scad, mackerel and gurnards come inshore seasonally to spawn and were probably caught in late spring–autumn. All of the fish could have been caught locally, in the North Sea and Wansum Channel. The use of fine nets positioned in shallow water probably explains the presence of tiny fish.

Marine shell by Rebecca Nicholson

The uppermost fills of the large, outer ditches on the north and east sides of the Roman enclosure in Zone 14 on Foads Hill contained very large quantities of marine shell (over 15,000 individuals have been fully recorded). These shellfish-rich deposits also included fills in pits surrounding a pair of slab-lined hearths 173051 and 191119. Lenses composed of single shell types within these fills suggest successive dumping events. Oysters (*Ostrea edulis*), mussels (*Mytilus edulis*), periwinkles (*Littorina littorea*), limpets (*Patella* cf. *vulgata*), whelks (*Buccinium undatum*) and red whelks (*Neptunea antiqua*) were common (Vol 2, Fig 16.1), sometimes occurring together and sometime in individual dumps. The scarcity of other shells of near-shore muds and sands was surprising and suggests that the shellfish were carefully selected and sorted.

Recovered oyster shells were in poor condition and of varying sizes and shapes, including classic round and oval forms as well as many others with lobate or more irregular forms and/or distorted hinges. Many valves had clearly been growing on a hard, irregular surface and irregular shell shape also indicates crowded conditions in many cases, a situation typically found in naturally occurring unmanaged native oyster beds (Winder 2011). About 13% of the oyster valves exhibit

Table 5.3 Anglo-Saxon unburnt human bone

Context	*Cut*	*Deposit*	*Phase*	*Quanti-fication*	*Age/sex*	*Pathology*
Zone 14						
126031	126030	inh. burial	MAS	*c* 50%	adult >35 yr. male	*ante mortem* tooth loss; periosteal new bone – tibiae; ddd – C3-4; osteoarthritis – C3-4; op – C5 (bsm); mv – wormian bones, congenital absence M3
126046	126045	inh. burial	MAS	2 shafts + frags. s.l.	juvenile *c* 5–12 yr.	
126058	126057	inh. burial	MAS	*c* 75%	adult >40 yr. female	*ante mortem* tooth loss; apical void; calculus; dental caries; impaction; periodontal disease; Schmorl's – T5, L3-4; osteoarthritis – T10; op – right knee; pitting – 5T apj, left hip; enthesophytes – right innominate; mv – wormian bones, palatine tori, T13
126060	126061	inh. burial	MAS	*c* 30%	adult >23 yr. ?male	op – left rib; pitting – right temporo-mandibular joint; mv – wormian bones
133045	133046	inh. burial	MAS	*c* 50%	adult >45 yr. female	calculus; dental caries; periodontal disease; ddd – S1; osteoarthritis – L5, S1; pitting – hips; mv – bipartite canine root
136051	136052	inh. burial	MAS	*c* 30% s.u.l.	adult *c* 18–30 yr.	hypoplasia
136057	136056	inh. burial	MAS	*c* 10% a.l.	adult >30 yr. ??male	op – L apj; periosteal new bone – femur shaft; exostoses – 1L apj
136060	136059	inh. burial	MAS	*c* 25% u.l.	adult >18 yr.	periosteal new bone – left tibia
136063	136062	inh. burial	MAS	*c* 45%	adult >30 yr. male	calculus; dental caries; hypoplasia; periodontal disease; enthesophytes – left humerus; mv – wormian bones, mandibular torus
136086	136085	inh. burial	MAS	*c* 40% a.u.l.	adult >45 yr. male	osteoarthritis – 1L, hips; op – L apj, wrists, right hip, knees, left ankle; enthesophytes – calcanea
166033	166032	inh. burial	MAS	*c* 45%	adult *c* 20–30 yr. male	calculus; dental caries; hypoplasia; periodontal disease; mv – congenital absence M3
166036	166035	inh. burial	MAS	*c* 20% s.a.l.	juvenile *c* 8–10 yr.	hypoplasia; *cribra orbitalia*; mv – variant I2 & canine
166044	166043	inh. burial	MAS	*c* 55%	adult >50 yr. female	*ante mortem* tooth loss; apical void; dental caries; op – right hip, knees; pitting – right temporo-mandibular joint; enthesophytes – patellae; mv – wormian bones, mandibular torus
176044	176043	inh. burial	MAS	*c* 80%	adult *c* 25–35 yr. male	*ante mortem* tooth loss; apical voids; calculus; dental caries; periodontal disease; hyper-eruption; *cribra orbitalia*; pitting – right s-c; mv – wormian bones
176046	176047	inh. burial	MAS	*c* 38%	adult >30 yr. female	*ante mortem* tooth loss; apical void; dental caries; hypoplasia; periodontal disease; endocranial new bone; op – C1; pitting – right temporo-mandibular; mv – variant M2, palatine tori
176052	176053	inh burial	MAS	*c* 35%	adult >45 yr. female	apical voids; hyper-eruption; op – C2
176056	176055	inh. burial	MAS	*c* 80%	adult *c* 40–50 yr. female	*ante mortem* tooth loss; apical voids; calculus; dental caries; periodontal disease; ivory osteoma – mandible; ?cyst – C1; ddd – C5-6, L5, S1; osteoarthritis – T12 & 3L apj, right wrist; op –T9-10 & S1 apj, T10 (tp), right knee; pitting – temporo-mandibular joints, hips; cortical defect – right distal femur; mv – palatine tori
220002	220001	inh. burial	MAS	*c* 45%	subadult *c* 15–17 yr. male	calculus; hypoplasia; impaction; periodontal disease
223006	223004	inh. burial	MAS	*c* 8% u.l.	adult >18 yr. ??male	
223009a	223007	inh. burial	MAS	*c* 15% s.u.l.	adult >18 yr.	pitting – right knee; enthesophytes – right patella
223009b	223007	R. (grave)	MAS	frag. + s.a. teeth	infant *c* 1.5–3 yr.	
223012	223010	inh. burial	MAS	*c* 70% s.u.l.	adult *c* 20–30 yr. male	*ante mortem* tooth loss; calculus; dental caries; hypoplasia; periodontal disease; fracture – left distal tibia; periosteal new bone – left distal femur & patella; op – left knee; cortical defect – right distal tibia, left tarsals; mv – variant M3
223015	223013	inh. burial	MAS	*c* 32%	adult >35 yr.	*ante mortem* tooth loss; calculus; dental caries; hypoplasia; rickets – femora, tibiae; ?periosteal new bone – left tibia
223031	223033	inh. burial	MAS	*c* 60%	adult *c* 25–35 yr. ?female	calculus; dental caries; hypoplasia; periodontal disease

Table 5.3 (continued)

Context	*Cut*	*Deposit*	*Phase*	*Quanti-fication*	*Age/sex*	*Pathology*
Zones 19 and 20						
126055	126054	inh. burial	EAS	*c* 65%	adult *c* 18–23 yr. female	calculus; *coxa vara*; Schmorl's – T8-12, L1-2; ddd – 9T; op – T5-6 apj; pitting – T5 & 7 apj; mv – partly lumbarised T11-12 & S1
126092	126091	inh. burial	EAS	*c* 55%	juvenile *c* 9–10 yr.	calculus; periosteal new bone – temporo-mandibular joints; mv – shovelled Is
126184	126183	?inh. burial	EAS	*c* 2% u.l.	subadult *c* 13–17 yr.	
126215	126214	inh. burial	EAS	*c* 90%	adult *c* 35–45 yr. female	*ante mortem* tooth loss; apical void; calculus; dental caries; hypoplasia; hypercementosis; periodontal disease; Schmorl's – L1; ddd – L1-2, L4; osteoarthritis – 4 left & 4 right ribs, right hip; op – 2L & S1 apj, T5-8 & 12 bsm, T1 c-v, T2-3 tp, 2 left ribs, left 1st MtT-P, right tarsal; pitting – L3-4 apj, right shoulder, left hip; enthesophytes – calcanea; mv – wormian bones
136108	136109	inh. burial	EAS	*c* 45%	infant *c* 1.5–2 yr.	
136112 = 136114 or 136115	136111	inh. burial	EAS	shaft + frags. u.	juvenile/subadult <16 yr.	
136113	136111	inh. burial (triple)	EAS	*c* 85%	adult *c* 18–25 yr. female	calculus; dental caries; hypoplasia; periodontal disease; cortical defect – 1st proximal phalanx (right foot); mv – wormian bones
136114	136111	inh burial (triple)	EAS	*c* 45%	subadult *c* 14–16 yr. ??male	calculus; hypoplasia; impaction; periodontal disease; cortical defect – left clavicle, humeri; mv – variant I, wormian bones
136115	136111	inh. burial (triple)	EAS	*c* 35%	juvenile *c* 10–12 yr.	calculus; dental caries; hypoplasia; hypervascularity – occipital & parietals; mv – wormian bones, metopic suture
136151	136150	inh. burial	EAS	*c* 90%	juvenile *c* 6.5–8 yr. ??female	calculus; dental caries; hypoplasia; *cribra orbitalia*; mv – variant M2, wormian bones, L6
137216	137217	coffined burial	EAS	shaft + frags. l.	adult >18 yr. ??female	
153033	153034	inh. burial	EAS	*c* 95%	adult *c* 40–45 yr. female	*ante mortem* tooth loss; apical void; calculus; dental caries; periodontal disease; *cribra orbitalia*; periosteal new bone – mandible, maxilla; secondary sinusitis; rickets – left ulna; Schmorl's – T6-12, L1-2; ddd – L3; osteoarthritis – L5 & S1, hips; op – C1-2 anterior facets, T11/L4-5/S1 apj, 3T/4L/S1 bsm, T10-12 c-v, T9-10 tp, 2 left ribs, left s-c & shoulder, elbows, right wrist & hip, knees; pitting – 7T apj, temporo-mandibular joints; enthesophytes – innominates, calcanea; ossified cartilage – thyroid; mv – *os acromiale*; metopic suture, occipital sutures, wormian bones
153057	153058	inh. burial	EAS	*c* 95%	adult *c* 35–45 yr. male	*ante mortem* tooth loss; dental abscess; calculus; periodontal disease; hyper-eruption; Schmorl's – T6-12, L4; ddd – C6-7, T10-12; osteoarthritis – right 2nd IP (distal), right wrist; op – C1 anterior facet, 1C/1T/2L apj, 1C/6T/5L bsm, T1 & 10-12 c-v; 3T tp, 2 left & 3 right ribs, s-cs, left a-c & wrist, elbows; pitting – C4 & T6 apj, T5-7 c-v, s-cs, a-cs; enthesophytes – innominates, legs, calcanea; ossified cartilage – thyroid, rib; mv – wormian bones, palatine tori
153077	153075	inh. burial	EAS	*c* 60%	adult *c* 35–45 yr. female	calculus; dental caries; periodontal disease; *cribra orbitalia*; rickets – femora; Schmorl's – T7-10; op – C1 anterior facet, T11 c-v; pitting – C1 anterior facet; enthesophytes – pelvis (?parturition)
153086	153084	inh. burial	EAS	*c* 3% s.u.l.	adult >45 yr.	calculus; hypercementosis; op – C1 anterior facet
153093	153092	inh. burial	EAS	*c* 35%	juvenile *c* 7–9 yr.	calculus; hypoplasia
166103	166102	coffined burial	EAS	*c* 30%	adult *c* 30–40 yr. male	calculus; hypoplasia; impaction; mv – variant P1s
166106	166105	inh. burial	EAS	*c* 45% a.u.l.	adult *c* 35–45 yr. female	

Table 5.3 (continued)

Context	*Cut*	*Deposit*	*Phase*	*Quanti-fication*	*Age/sex*	*Pathology*
166117	166116	inh. burial	EAS	*c* 98%	adult *c* 30–35 yr. female	calculus; dental caries; hypoplasia; periodontal disease; Schmorl's – T11; osteoarthritis – T9-10, right sacro-iliac; op – C1 anterior facet, C6 & L4-5 apj, T7 c-v, 5T tp, 4 left & 3 right ribs; pitting – C4 & T5 apj; mv – wormian bones, mandibular torus, non-fusion – C2 lamina, lumbarised left S1 & severe asymmetry
166126	166125	inh. burial	EAS	*c* 75%	infant *c* 1–2 yr.	hypoplasia; *cribra orbitalia*
166142	166141	inh. burial	EAS	*c* 8% s.u.l.	adult *c* 20–35 yr.	calculus
171170	171171	inh. burial (disturbed)	EAS	*c* 25%	adult *c* 30–40 yr. female	calculus
189176	189174	inh. burial	EAS	*c* 5% s.u.l.	adult *c* 25–35 yr.	hypoplasia; mv – enamel pearl
189179 /80	189181	inh. burial (disturbed)	EAS	*c* 20%	adult >35 yr. ?female	osteoporosis; osteoarthritis – right 1st C-MtC & MtC-P; op – L apj, 3 right distal IPs (hands); mv – variant right capitate
205114	205112	inh. burial	EAS	shaft + frags. a.l.	infant *c* 0.5–1.5 yr.	
205117	205115	inh. burial	EAS	*c* 98%	adult *c* 40–50 yr. female	*ante mortem* tooth loss; calculus; dental caries; hypoplasia; periodontal disease; *cribra orbitalia*; ddd – C6-7; osteoarthritis – T1 c-v, T3-12, L4; op – T6-7 apj, T11 c-v, T8 tp, 5 left & 6 right ribs, right hip; pitting – T12 c-v, temporo-mandibular joints, 5 left & 6 right ribs, right s-c, shoulder & hip; mv – palatine torus
209244	209243	coffined burial	EAS	*c* 98%	adult *c* 40–50 yr. male	*ante mortem* tooth loss; apical void; calculus; dental caries; periodontal disease; Schmorl's – T6-12, L1-4; ddd – C4-7, T5-12, L1-4; osteoarthritis – T3 & 11; op – C1-2 anterior facets, 1C/8T/2L apj, 2C/2T/1L bsm, 5T tp, 4 left ribs, left a-c, elbow & 1st MtC-P, hips, knees, right wrist & 1st MtT-P; mv – wormian bones, mandibular torus, atlas bridging
216005	216007	inh. burial (disturbed)	EAS	*c* 10% a.u.l.	adult >18 yr. ??female	
217136	217135	inh. burial (disturbed)	EAS	<20 frags ?l.		subadult/adult >13 yr.
218205	218206	inh. burial (stacked)	EAS	*c* 60%	adult *c* 30–35 yr. male	calculus; dental caries; enamel hypoplasia; Schmorl's – 4T; ddd – 4T, 2L; op – T tp, left rib; mv – wormian bones
218207	218206	inh. burial (stacked)	EAS	*c* 25%	adult >45 yr. female	*ante mortem* tooth loss; dental caries; hyper-eruption; infection – maxilla; pitting – left temporo-mandibular joint; mv – Vastus notches
220012	220011	inh. burial	EAS	*c* 40%	adult *c* 25–35 yr. ?female	calculus; dental caries; hypoplasia; mv – variant Is & canine
220096 –98	220095	inh. burial	EAS	*c* 45%	adult *c* 30–40 yr. female	calculus; hypoplasia; periodontal disease; Schmorl's – 5T; ddd – C3-5, 8T; op – C1-2 anterior facet; mv – variant canine
220110	220109	inh. burial	EAS	*c* 85%	adult *c* 30–40 yr. female	*ante mortem* tooth loss; apical void; calculus; dental caries; hypoplasia; periodontal disease; fracture – left 6th rib; Schmorl's – L2-3; plastic changes – T3-4; pitting – T2-6 apj, right s-c; mv – metopic suture
220134	220133	inh. burial (disturbed)	EAS	*c* 50%	adult *c* 35–45 yr. female	apical void; calculus; dental caries; hypoplasia; periodontal disease; blunt weapon trauma – skull; infection – maxilla; ddd – S1; op – C3 & S1 apj; mv – wormian bones
228045	228047	inh. burial (disturbed)	EAS	*c* 90%	adult *c* 25–35 yr. female	calculus; hypoplasia; periodontal disease; Schmorl's – 4T, L1-4; osteoarthritis – T1; op – 1C, T12 apj, 2T tp; pitting – T11 apj, T1 c-v; mv – variant I2s & M3
250052a	250050	inh. burial (stacked)	EAS	*c* 15% s.u.l.	adult >45 yr. ?male	
250052b = 250054	250050	R.	EAS	*c* 10% l.	adult >18 yr.	
250054	250050	inh. burial (stacked)	EAS	*c* 25%	adult >50 yr. male	*ante mortem* tooth loss; apical void; osteoarthritis – right glenoid; op – right hip & 1st MtT-P; pitting – left hip

Table 5.3 (continued)

Context	*Cut*	*Deposit*	*Phase*	*Quanti-fication*	*Age/sex*	*Pathology*
251046	251044	inh. burial	EAS	*c* 99%	adult *c* 18–23 yr. male	calculus; hypoplasia; *cribra orbitalia*; Schmorl's – T7-12, L4-5; cortical defect – costo-claviculars; mv – shovelled I2, metopic suture, wormian bones
251062	251061	inh. burial	EAS	*c* 65%	adult *c* 30–40 yr. male	calculus; dislocation – right distal radius/ulna; Schmorl's – T6-12, 5L; ddd – C5-7, T7-12, 4L, S1; op – C1 anterior facet, C2/T12/L4-5 apj, T5-6 bsm, T1 & 12 c-v, T11 tp, left rib & sacro-iliac, right wrist, left tarsal; pitting – left s-c & hip, right shoulder; mv – Vastus notch
252075	252076	inh. burial (stacked)	EAS	*c* 30%	adult >55 yr. male	osteoporosis; ankylosis/?fracture – right hip; dislocation – right distal radius/ulna; op – right sacro-iliac; pitting – right wrist
252079	252076	inh. burial (stacked)	EAS	*c* 40%	adult *c* 25–35 yr. female	calculus; hypoplasia
257020	257021	inh. burial	EAS	teeth + frags. s.	infant *c* 2.5–3.5 yr.	hypoplasia
262071	262072	coffined burial	EAS	*c* 15% s.a.l.	adult *c* 25–35 yr. ?female	calculus; hypoplasia
266019	266018	inh. burial (double)	EAS	*c* 60%	subadult *c* 14–16 yr. male	calculus; hypoplasia
266020	268018	inh. burial (double)	EAS	*c* 70%	adult *c* 30–40 yr. female	calculus; hypoplasia; *cribra orbitalia*; Schmorl's – T10; op – C1-2 anterior facet, T9&11 tp; pitting – T1 c-v; mv – variant M3, wormian bones, palatine torus
267025	267026	inh. burial (disturbed)	EAS	*c* 90%	adult *c* 35–45 yr. female	calculus; dental caries; hypoplasia; periodontal disease; osteoporosis/osetopaenia; ddd – L5-S1; osteoarthritis – C1-2 anterior facet, T1 & 11-12 c-v, 6 left & 4 right ribs; op – C6 bsm, T1 & L1-5 apj, T2-3 tp, left knee; pitting – C5-6 apj, T5 c-v, left temporo-mandibular joint; mv – wormian bones
267033	267034 (pit)	?R	EAS	*c* 17 frags.	?	
275004	275002	inh. burial	EAS	*c* 30% s.u.l.	adult >18 yr. ??female	calculus; hypoplasia
279037	279039	inh. burial	EAS	*c* 85%	adult *c* 45–55 yr. female	*ante mortem* tooth loss; apical void; calculus; dental caries; hypoplasia; hypercementosis; hyper-eruption; periodontal disease; osteoporosis; *cribra orbitalia*; infection – maxilla; Schmorl's – T5-7 & 11-12; ddd – C6-7, T12, 3L, S1; osteoarthritis – L4, 1 rib; op – C1 anterior facet, 2T & 2L apj, 1T tp, 4 right ribs, shoulders, left wrist, hands, right hip, knees; pitting – C3 & T4 apj, T4 & 11 c-v, temporo-mandibular joints, left s-c, right a-c; mv – atlas bridging, palatine tori
280023	280022	coffined burial	EAS	*c* 15%	adult >45 yr. female	
282016	282014	?inh. burial	EAS	u/id frags.	?	
286011	286016	inh. burial	EAS	*c* 5% s.u.l.	adult *c* 20–30 yr. ?male	hypoplasia; mv – wormian bones
286015	286013	?inh. burial	EAS	*c* 5% s.	adult >18 yr. ?male	

KEY: s.a.u.l. – skull, axial skeleton, upper limb, lower limb (skeletal areas represented where not all are present); R. – redeposited; phase – EAS – early Anglo-Saxon; MAS – mid-Anglo-Saxon; op – osteophytes; ddd – degenerative disc disease; *o.c. dessicans – osteochondritis dessicans*; sbc – solitary bone cyst; mv – morphological variation; bsm – body surface margins; C/T/L/S – cervical/thoracic/lumbar/sacral vertebrae, MtC/MtT – metacarpal/tarsal; MtC/T-P – metacarpal/tarsal – phalangeal joint; IP – interphalangeal joint; apj – articular processes (vertebrae); tp– transverse process (vertebra); c-v – costo-vertebral; a-c – acromio-clavicular; s-c – sterno-clavicular; p-d – proximal-distal; u/id – unidentifiable

epibont infestation or encrustation, lower than for the preceding periods.

Mussel shells were abundant in some feature fills: almost 800 valves were recovered from 40L of sample 6997 (277008), a fill of pit 277004. Mussel shells from early–mid-Saxon pit fill 189021 (sample 5460, Zone 11) are relatively large (mean length 51mm) and appear sorted for size. Limpet and periwinkle shells were also abundant in some of the feature fills, as were whelks and red whelks. The periwinkles, limpets and mussels would have been collected at low tide, from rocks or intertidal beds while the whelks and red whelks are likely to have been recovered by potting, although some could have been collected at extreme low tide. It is almost certain that the red whelks came from a population known to exist off Thanet in Pegwell and Sandwich Bays (Light

Table 5.4 Number of identified fish bones and scales from Anglo-Saxon deposits

	Number of bones
Elasmobranch (shark/ray)	5
Ray family	20
Thornback ray	4
cf. Spotted ray	1
Eel	161
Conger eel	9
Clupeid (herring family)	228 (+3 scales)
Herring	32
Herring/Sprat	7
Anchovy	32
cf. Pike	1
Garfish	25
Gadid (cod family.)	124
Cod	233
Cod/Saithe	11
Cod/Saithe/Pollack	3
Cod/Whiting	7
Whiting	30
Haddock	8
Rockling	1
Sand eel	2
Sea bass	2
Scad	5
Sea bream	2 (+2 scales)
cf. Grey mullet	1
Mackerel	110
Gurnard	4
Tub gurnard	2
Cottid	3
Flatfishes indet.	18
Turbot/Brill	1
Right-eyed flatfish	9
Plaice	1
Dover sole	4
Unidentified	112
Total	1223

2009), since otherwise these molluscs are common only in the North Sea, around Ireland and north to Arctic waters (Hayward and Ryland 1990, 685). The similarity in size between the common and red whelks is an indication that both were collected in the same way, probably by potting, as they can be found together in coastal waters of 15–100m deep. The salivary gland of the red whelk is poisonous both when fresh and when cooked. Unless mistaken for the very similar common whelk, the Anglo-Saxons would have probably removed the poisonous gland.

It is extremely likely that all the shellfish in the assemblage was collected locally. Periwinkles, mussels, limpets and whelks, in particular, are now common at Pegwell Bay in the intertidal zone and native oyster beds are also likely to have been present locally, but as elsewhere in the UK these have largely disappeared due to environmental change (eg, the changing topography of the Thanet coastline), disease and over-exploitation. Native oysters from the north Kent coast spawn in April–August and during these months the oysters are unpalatable, so collection would not have taken place during the summer. Mussels also spawn April–September and are better collected in the colder months. Since all shellfish are more likely to spoil quickly in summer it is very likely that most were collected in autumn–early spring, although some collection at other times of year cannot be ruled out.

The shellfish dumps along the chalk spur in Zone 14 contrast to the smaller, more mixed deposits rich in shells from other zones along the road scheme and from preceding periods. The amount of shell, which seems to have accumulated fairly rapidly, is suggestive of a cottage-scale industry related to a trade in shellfish meat, probably preserved by salting or pickling in brine, as is known from the 17th century (Philpots 1890). Notches on a significant proportion of the oyster shell edges suggest that many were opened while still alive, since the valves would open naturally when heated. However, given the proximity of the slab-lined hearths, the occasional slightly reddened shells and the possible remnants of fired clay with wattle drying floors found in nearby mid-Saxon pits (see Poole, above) it is plausible that at least some of the extracted shellfish were dried and/or smoked to preserve them. Shellfish drying is documented ethnographically from other parts of the world (Claason 1998, 187, 224). Preserved shellfish may have been traded to the newly established wics or more locally in Kent to the growing coastal trading-places.

Plant macrofossils *by Kath Hunter and Rebecca Nicholson*

Only seven samples dating to the Anglo-Saxon period were fully recorded, four of which came from mid-Saxon features in Zone 14. The most noticeable contrast between the Roman assemblage and that of the Saxon period is the abrupt reduction in the quantity of glume wheat grain and chaff. This is a product of the rapid decline in the cultivation of glume wheats in favour of the free threshing type. The fact that the free threshing wheats do not need to be parched to release the grain from the chaff means that both the grain and the chaff are less likely to come into contact with fire. Rye also becomes more evident with the influence of northern European agricultural practices; small numbers of rye seeds and chaff were recorded in several samples but appear to be frequent in some early Saxon samples from nearby Thanet Earth (Carruthers 2012). Hulled barley continues to be a constant element of the cereal assemblage. Peas and beans are not represented in the early Saxon samples, but this may be the result of the relatively small number of samples analysed as they were important on other Anglo-Saxon sites (Hunter 2005). Flax is frequent in early/mid-Saxon sample 5407 from ditch 189018 (Zone 11).

A possible insight into crop processing is provided by samples 6938 and 6980, from pits 202128 and 202100 (Zone 14), which contained well-preserved deposits of barley associated with fragments of fired clay with distinct wattle impressions. These barley-rich samples include some side grains suggestive of the presence of a six row barley type; this differs from the grain-rich mixed assemblage recovered from excava-

tions at Springhead, also in Kent, which was dominated by thousands of grains of free threshing wheat together with barley and rye, suggesting the processing waste from a mixture of crops (Stevens 2011a). Some free threshing wheat type grains are present in sample 6980 and a rachis fragment was found with a single spelt glume from sample 6554.The abundance of stinking chamomile seeds in these deposits suggests the cultivation of heavy clay soils, possibly the 'brickearth' found to the north of the Ebbsfleet Peninsula, in contrast to much of the evidence from earlier periods on the site.

Both of the pits from Zone 14 contained fired clay fragments with wattle impressions which are similar to those found with the grain-rich Anglo-Saxon deposit from Springhead. At both sites, this has been interpreted as the remains of a crop drying surface, temporarily constructed at the time of harvest to prepare grain for storage in order to reduce the risk of spoiling through unwanted germination and/or rotting of stored grain. Similar deposits have also been found from the Iron Age on other sites, but not from East Kent (Cynthia Poole pers. comm.). Both free threshing wheat-type grain and chaff were noted from mid-Saxon enclosure ditch sample 6922 (Zone 14) which also produced broad bean and pea seeds.

Charcoal *by Denise Druce*

Blackthorn-type roundwood dominated the mid-Saxon deposits 133079 and 176068 in Zone 14. Although a third pit fill, 182133, also contained blackthorn-type charcoal, this feature was dominated by hazel roundwood, with a smaller component of hawthorn-type. Rare to frequent numbers of other, previously recorded, taxa include field maple and oak. However, species recorded exclusively in the Anglo-Saxon features include dogwood (*Cornus sanguinea*), beech (*Fagus sylvatica*), wild privet (*Ligustrum vulgare*), and wayfaring-tree (*Viburnam lantana*). All of these taxa would have thrived on the chalk soils of Landscape 2, possibly forming open scrubby woodland or hedges. All of the deposits, including 133079, which was interpreted as being possibly associated with shellfish processing, contained other material such as calcined bone and/or charred plant remains characteristic of 'domestic' rubbish.

Chapter 6

Farming, Caring for the Old and Sick and Defence: The Medieval, Post-medieval and Modern Periods

by Phil Andrews, Hugh Beamish, Kate Brady, John Powell and Gerry Thacker

Introduction

Identifiable medieval activity was confined almost entirely to the Ebbsfleet peninsula, in Zones 1–5, the southern end of Zone 6 and the Weatherlees Pond site (see Fig 1.1 for Zone locations). Elsewhere, the route lay within what are, and have been (since the Roman period) sparsely populated parts of Thanet, fringed to the south by former marsh.

In Zones 1–3, at the southern end of the Ebbsfleet peninsula, were elements of probably two broadly contemporary farmsteads, the use of both spanning the 11th to 14th centuries, with some activity possibly persisting into the beginning of the 15th century. 'Innings' to extend and improve agricultural land in this area were accomplished during the medieval period through the construction of earthen embankments along both sides of the Wantsum Channel by monastic owners.

In Zones 4–5 and the Weatherlees Pond site there was a further sequence of field or enclosure boundaries, this group of features being of slightly later date than those in Zones 1–3, and probably spanning the 13th to early 15th centuries. Other elements of the ditch system were identified in adjacent excavations to the east in 2005 (Egging Dinwiddy and Schuster 2009) and also during more extensive evaluation in 1992 prior to construction of the Weatherlees Wastewater Treatment Works (Hearne *et al* 1995). Late medieval pottery from the top of an infilled well in Zone 5 and a short length of early post-medieval metalled track in Zone 4 suggest the possibility that there may have been occupation in this particular area since the 13th century.

To the north, trackways running east-west just below the crest of the Chalk ridge in Zones 19 and 20 had their origin in the Anglo-Saxon period or earlier, and this was the route broadly followed by medieval *Dunstrete* which ran a little further to the north below Manston airport.

Evidence for post-medieval activity was extremely sparse, and most of the area covered by the route was given over to arable agriculture by the 18th century. The absence of any associated ditches indicates that hedges were probably established to define field boundaries. The only noteworthy post-medieval remains were a group of chalk quarries and associated trackway in Zone 17, some footings relating to the fever hospital of the Isle of Thanet Union Workhouse, established in 1836, in Zone 23, and a series of World War II 'zig-zag' trenches and other features in Zones 19 and 20 forming part of the defences of the RAF airfield at Manston.

The medieval sites

Zones 1–3

Ebbsfleet peninsula: medieval farmstead A

The majority of the features in Zones 1 and 2 were medieval, with virtually all assigned a date between the 11th and 14th centuries. Most of them were ditches, with a few pits, and postholes probably defined fence lines or other insubstantial structures. The ditches formed part of a series of fields and enclosures, of two or more phases, and probably represent part of a farmstead which was located at the southern end of the Ebbsfleet peninsula, with its focus to the east of Zones 1 and 2. The fields and enclosures were most likely associated with animal husbandry, and areas of disturbed natural recorded adjacent to some of them have been interpreted as animal trample.

Phase 1 of the farmstead was represented by at least one small enclosure, which was later replaced, in phase 2, by a more extensive series of larger, sub-rectangular enclosures or fields (Fig 6.1).

Phase 1 (11th–13th centuries)

Enclosure group 193161 comprised a series of ditches (172189, 172190, 172191, 172271 and 172276) that enclosed a somewhat irregular area of 500m². The earlier ditches (172189 and 172271; Fig 6.2) formed the northern and eastern sides of the enclosure; both were relatively shallow, at approximately 0.5m deep, and had silted up naturally. These were later replaced by ditches 172190 and 172191 which formed the southern side of the enclosure and re-established the eastern arm, and had been recut several times. They may not all have been open at the same time, but it is clear that they were broadly contemporary. Pottery recovered from them indicates an early medieval date, spanning the mid-11th to mid-13th centuries. To the east lay several ditches and gullies (172181, 172183 and 172187) which may have been associated with enclosure 193161, but relatively little of these features could be exposed and though stratigraphically early none produced any dating evidence.

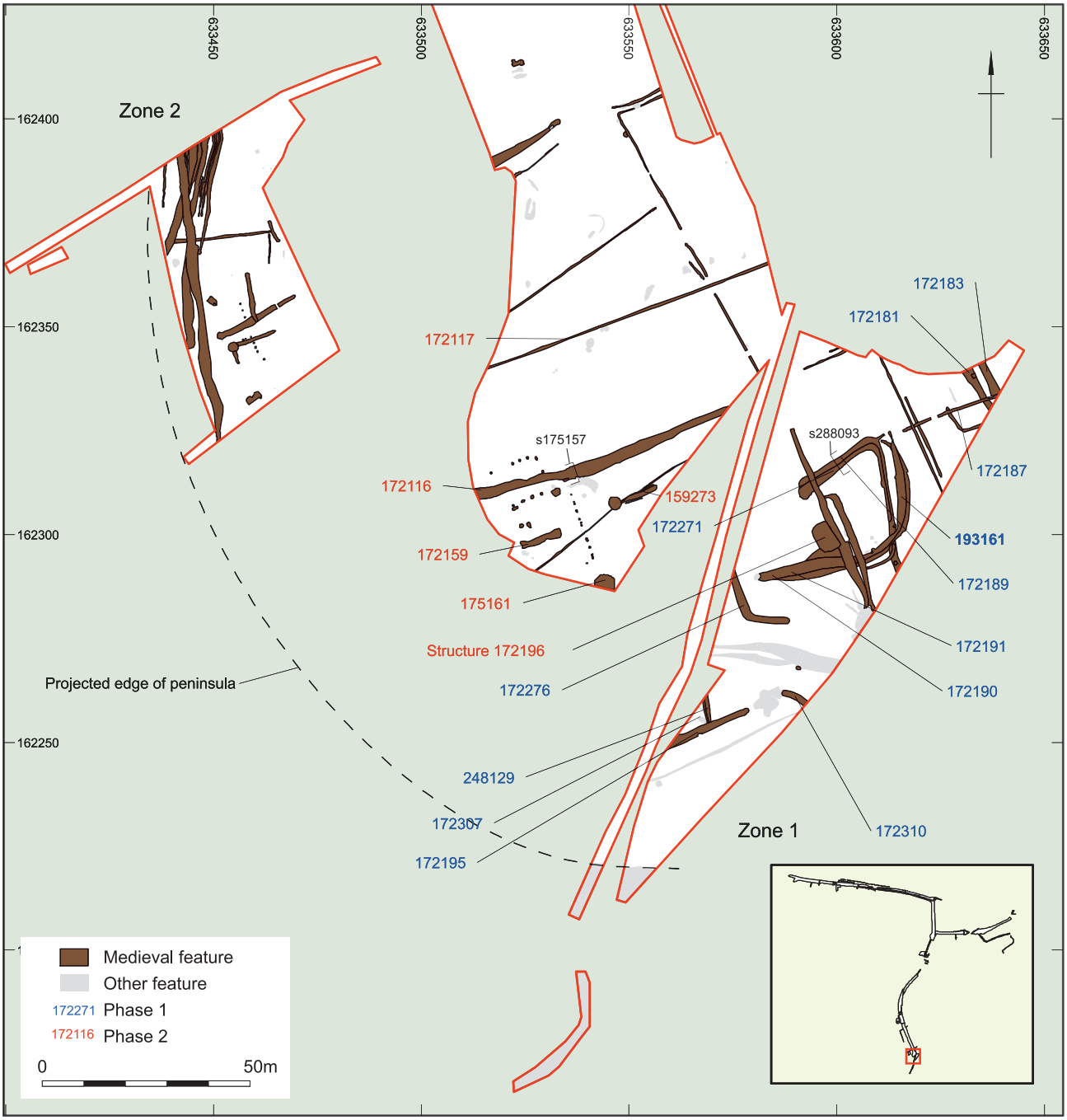


Fig 6.1 Plan of medieval farmstead A, phases 1 and 2 (Zones 1 and 2)

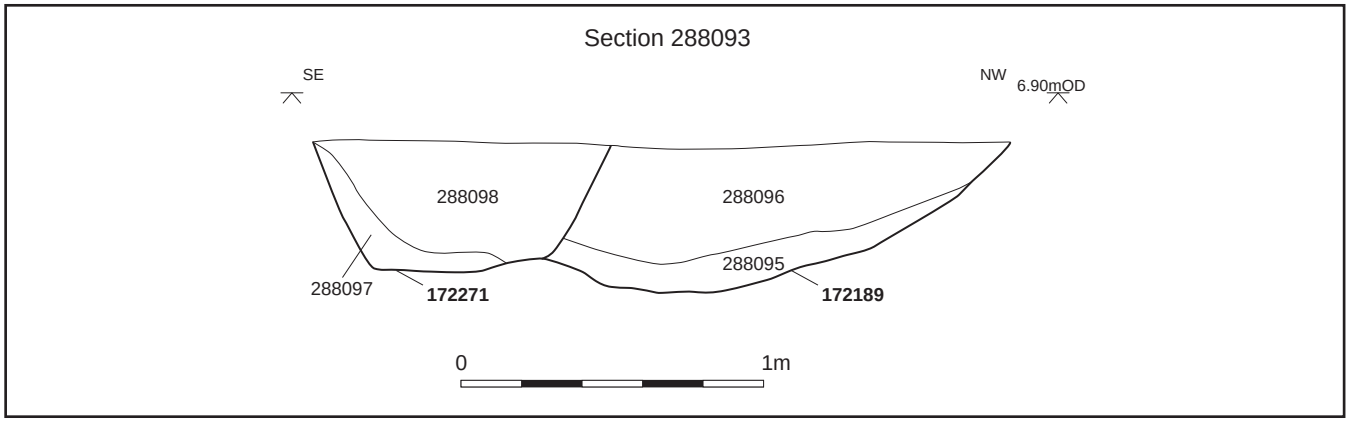


Fig 6.2 Section of medieval ditch group 193161 (Zone 1)

A small probable structure (172196) was located within enclosure 193161, but may have post-dated its use and is, therefore, described below. Also, within enclosure 193161, and to the west of structure 172196, was an area where the surface of the natural had been heavily disturbed, possibly as a result of trampling by animals.

Two further ditches (172195 and 172310) lay close to the southern edge of the peninsula and also formed part of this layout of early medieval features. A possible entrance, measuring 8.7m wide, was recorded between these ditches. Ditches 172310 and 172195 probably bounded the lower lying, wetter ground to the south at the tip of the peninsula. Two small ditches, 172307 and 248129, north-south at 90° from ditch 172195, were only partly exposed, but clearly formed part of the early medieval enclosure system.

To the west, in Zone 2, no features could be assigned with certainty to this early medieval phase, though it is possible that one or more of the boundary ditches along the west side of the peninsula belong to this phase. Little or no dating evidence was recovered, but for most a 13th–late 14th- or early 15th-century date is considered likely.

Phase 2 (13th–14th centuries)

Ditches 172116 and 172117 along with the ditch segments 159273 and 172159 and pit 175161, (Figs 6.1, 6.3) may have represented a transitional (phase 2) stage in the development between the phase 1 and phase 3 enclosures. Although no stratigraphic relationships could be determined, they appear in plan to more likely relate to the phase 1, early medieval layout, apparently confined to the southern end of the Ebbsfleet peninsula. Pottery, however, indicates a mid-13th–late 14th/early 15th-century date for these two ditches, and part of a gilded buckle plate came from ditch 172116.

Structure 172196 may also have belonged to a transitional phase. It produced mid-13th–late 14th/early 15th-century pottery, though this might simply reflect its disuse and abandonment, and stratigraphy indicates that it was later than phase 1 enclosure 193161. However, it was cut by field system ditch 172194 (see below, Fig 6.4) which formed part of the phase 3 arrangements. Structure 172196 was rectangular in plan, measured approximately 7m by 5m, and was aligned roughly north-west to south-east. It comprised an irregular arrangement of a few postholes and post pads, two possible beam slots, and the remains of a hearth and a patch of flint cobbles (Pl 6.1). Structure 172196 is thought to have possibly been open on the eastern side (though this may simply be a consequence of truncation by ditch 172194), and appears to have been an insubstantial, possibly temporary structure, perhaps the remains of a small hut or shelter.

Further excavation was undertaken within Zone 2 in 2012, between this and Zone 1 to the east, in advance of the construction of a digester unit. This revealed a continuation of the medieval ditches recorded in Zones 1 and 2 and a small number of discrete features (including two patches of cobbling and several postholes, probably part of a building), all likely to have been associated with phase 2 of medieval Farmstead A.

Phase 3 (14th–15th centuries)

The third phase of farmstead A was represented by a series of larger, rectangular enclosures or small fields (group 193162) in Zone 1 (Fig 6.4). These were laid out on a north-west to south-east alignment and formed a relatively regular layout in this part of the Ebbsfleet peninsula, with a similar arrangement to the north in Zone 3 and beyond this in Zone 4 and adjacent areas. Finds recovered from the ditches included 13th–15th-century pottery, small quantities of animal bone and ceramic building material and occasional iron objects.

The northern limit to the group of larger, rectangular enclosures or fields was marked by ditches 172123 and 172125, with a 15m wide gap between them probably forming an entrance. The longest NW–SE axis of the field system was composed of ditches 172119, 172120, 172158 and 172194, and was recorded over a distance of 140m; three gaps in this ditch probably mark entrances (rather than being the result of truncation) (Fig 6.4). At its northern end the ditch turned at 90° to the north-east, where it was cut by a pit containing a copper alloy wire pin of 16th–17th-century date, and then continued beyond the limit of the excavation. Several ditches were recorded at 90° to this axis and have been interpreted as part of the same enclosure system, for example, ditch 172118 to the west which terminated 2.5m short of the

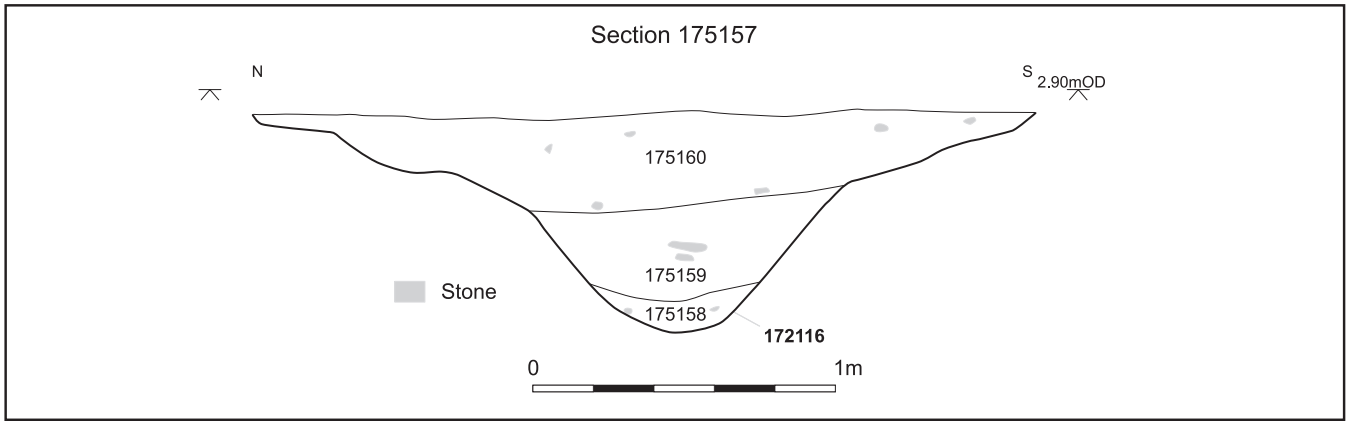


Fig 6.3 Section of medieval ditch 172116 (Zone 1)

Pl 6.1 Medieval structure 172196 (Zone 1; view from south)

north-west to south-east ditch 172120. Approximately 120m south of ditch 172118, and on a similar alignment, was ditch 172193, close to the tip of the peninsula; this ditch is undated and there is a possibility that it was later. To the east, ditches 172185 and 288090 also appear to have been part of the phase 3 system of fields or enclosures (Fig 6.4).

Further to the west, the majority of features in Zone 2 are likely to have been associated with medieval Farmstead A, and an intercutting sequence of ditches (193163) probably defined its western extent in phases 1, 2 and 3. Ditch sequence 193163 lay along the western edge of Zone 2, forming a boundary which probably defined the edge of the peninsula in medieval and possibly later times, separating the slightly higher, drier ground to the east from the marsh along the edge of the Wantsum Channel to the west (Pl 6.2). The Ordnance Survey map of 1896 (and subsequent aerial photographs) show a hedge or fence on the same NE–SW alignment as ditch group 193163, indicating that this boundary persisted into the second half of the 20th century, though there is nothing to suggest that any of the excavated ditches are of such recent date.

Although the majority of the ditches were on an approximately NE–SW alignment, and likely to date between the mid-11th and the late 14th century, the latest ditch (190389) was on a north-south alignment

Pl 6.2 Medieval boundary ditches 193163 (Zone 2; view from south-west)

and could be of later medieval date. This feature extended across the entire excavated area, for a distance of at least 70m, whereas most of the earlier ditches appeared to terminate and did not continue further to the south. Only a small quantity of finds was recovered from the ditches, and these included a small quantity of medieval ceramic building material and a few sherds of residual Iron Age pottery. The paucity of material is likely to reflect the peripheral location of this ditch at the edge of the settlement.

Several ditches lay perpendicular to group 193163 and probably formed part of the wider field system recorded in Zone 1 to the east. Two parallel, north-east to south-west aligned ditches (190391 and 190392)

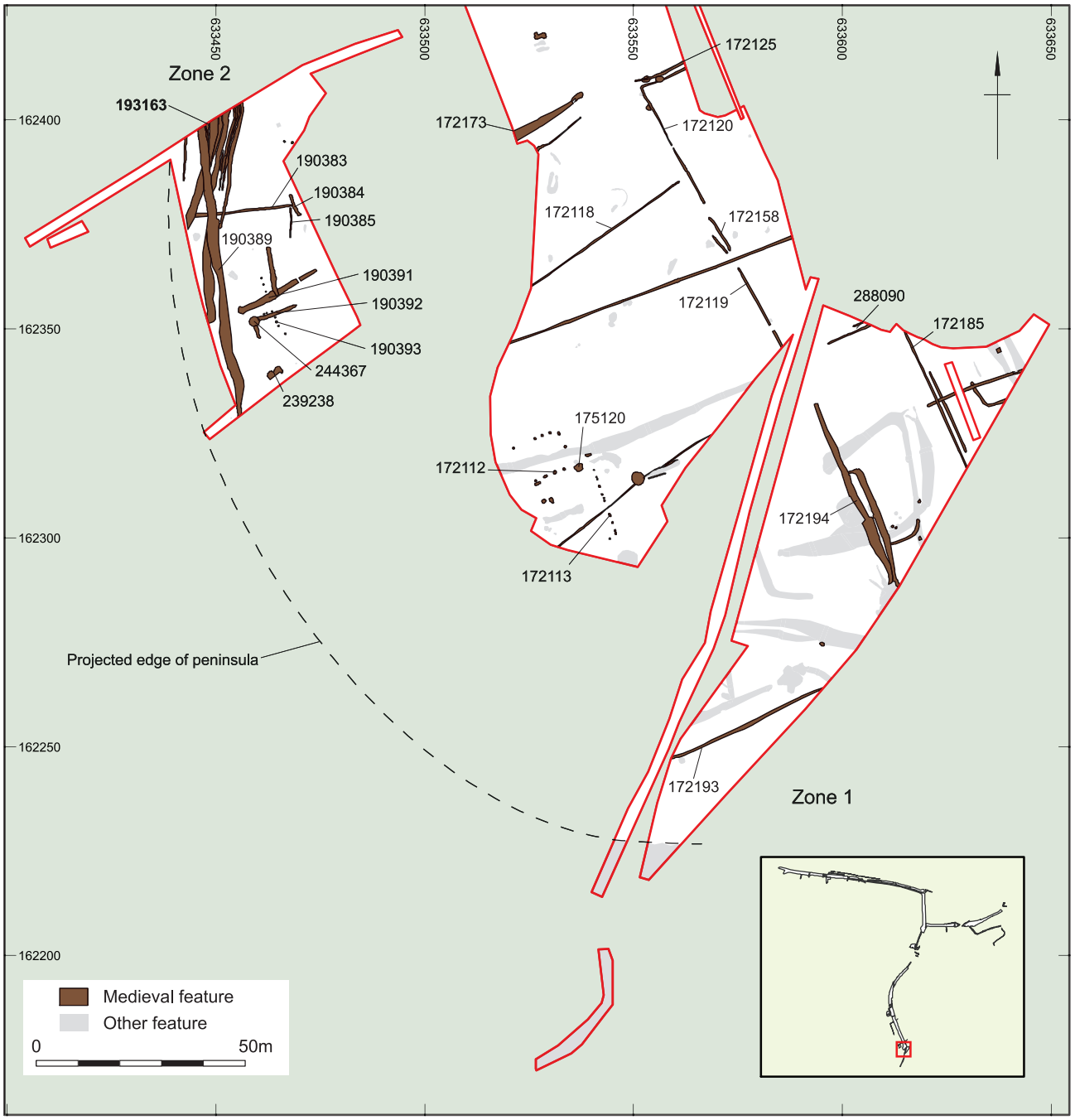


Fig 6.4 Plan of medieval farmstead A, phase 3 (Zones 1 and 2)

terminated 2.5m east of ditches 193163 and pit 244367, which cut through the corner of ditch 190392, contained a substantial (2.5kg) assemblage of mid-13th–late 14th/early 15th century pottery. Ditch 190391 may represent a continuation of 172123 in Zone 1, and perhaps marked the northern limit of the field system in this area.

North of ditch 190391 were three shallow ditches, 190383, 190384 and 190385, and a small pit. None produced any datable finds, though 190383 was cut by ditch group 193163; these were all probably part of the same phase of medieval enclosure and field boundaries.

Towards the southern edge of Zone 2 was a small area of flint cobbling (239238). This cobbling was similar to that in structure 172196 in Zone 1, and might indicate the presence of another insubstantial, apparently peripheral, and in this case possibly later structure. The cobbling had been truncated along its southern edge and lay within a shallow, sub-rectangular cut 0.45m deep. Finds recovered from the putative structure included mid-13th–late 14th-century pottery and some ceramic roof tile. The relatively large quantity of pottery from pit 244367 to the north might have been related to the use of this structure.

A post-built structure (172112) and a fence line (172113) were recorded towards the south-western edge of Zone 1 (Fig 6.4). Both are undated and their relationship to pit 175120 (which contained a fragment of decorative copper alloy binding) and phase 2 ditches 172116, for example, is unclear. Either or both of the structures could have pre- or post-dated features 175120 and 172116. Posthole group 172112 formed a rectangular arrangement measuring approximately 12m by 9m

that may have been an animal pen rather than a building. Extending from close to the south-east corner of group 172112 was a line of 12 N–W to S–E aligned postholes, 172113, forming a fence line. Further to the north-west, in Zone 2, another undated line of postholes, 190393, probably marked another fence line, although the relationship to ditches 190391 and 190392 is unclear.

Ebbsfleet peninsula: Medieval farmstead B

In addition to the medieval farmstead (A) partly uncovered in Zones 1 and 2, elements of a second (B) were recorded in Zone 3 (Pl 6.3). This farmstead probably also originated in the 11th–12th century and perhaps continued to be occupied as late as the 14th or 15th century. However, unlike Farmstead A, no clear changes in layout between the mid-11th–mid 13th and the mid-13th–early 15th century are apparent, and the main phase of use may have been during the earlier period (Fig 6.5).

The principal concentration of medieval features was located towards the northern end of Zone 3, but a series of poorly dated ditches and gullies defining fields and enclosures were recorded in the central and southern areas, with another small group to the north. Several shallow ditches appeared to mark the southern extent of the farmstead, but there seems to have been no formal boundary to the north. However, this may have been defined by a slightly lower lying and possibly periodically flooded or marshy area, coinciding with the division between Zones 3 and 4. Some of the medieval ditches appeared to respect Early Bronze Age monument 193165, which suggests that this monument was still at least partly extant at this time.

Northern enclosures

Towards the north end of the zone, on the west side, was a relatively complex sequence of ditches that appeared to define several enclosures. The size and layout of the

Fig 6.5 Plan of medieval farmstead B, phase 1 (Zone 3)

Pl 6.3 Soil stripping in area of medieval farmstead B; the slightly lower lying land beyond is former marsh along the edge of the Ebbsfleet peninsula where it bordered the Wantsum Channel (Zone 3; view from north-east)

ditches, and the moderately large quantity of finds recovered, suggest that this was the focus of Farmstead B, although no structural remains were identified and it is probable that any associated buildings or structures lay immediately to the west. The enclosure ditches generally contained significant quantities of pottery of 11th–13th-century date, with a focus on the earlier part of this date range.

Two or possibly three rectilinear enclosures (172031, 172173 and 172179) were located immediately to the west or north-west of a series of intercutting ditches and extended beyond the western edge of the excavated area. The earliest and most substantial of the enclosure ditches was 172179, which was up to 3.75m wide, 0.9m deep, and had a wide, flat-bottomed profile (Fig 6.6). The ditch appears to have initially silted up naturally, but moderate quantities of pottery and animal bone were present within the secondary deposits. Ditch 172179 enclosed an area approximately 11m long north to south, but the width of the enclosure is unknown.

It is possible that the rectilinear enclosure (ditch 172031), to the north-east of ditch 172179, represents an additional element of the latter enclosure, but there are no stratigraphic relationships or finds that can substantiate this. Ditch 172031 might equally have been associated with the subsequent phase of enclosure represented by ditch 172173. Enclosure ditch 172031 also had a wide, flat-bottomed profile, with a maximum depth of 0.55m.

A later enclosure ditch (172173) cut through the top of the silted up enclosure ditch 172179. Ditch 172173 was on the same NW–SE alignment as the earlier enclosure but extended considerably further to the south, over a distance of approximately 60m. The ditch was narrower and shallower than its predecessor, and finds included pottery of 11th to 13th-century date from the basal fill, as well as some animal bone, ceramic building material and marine shell. The south-east corner of enclosure ditch 172173 and the north-west corner of enclosure ditch 172174 (see below), 3m to the south, clearly respect each other, and thus it is likely that the two enclosures were broadly contemporary, though it is suggested that ditch 172173 was dug earlier than 172174.

A series of intercutting ditches (159274 see Fig 6.5, 172169, 172170 and 172171 not numbered on plan) formed a NE–SW boundary that extended to the east of the northern enclosures and is likely to have spanned their period of use. Although the precise stratigraphic sequence is uncertain, the arrangement of these ditches, as well as several other short lengths of ditches and gullies in the area, clearly respected the enclosures. The

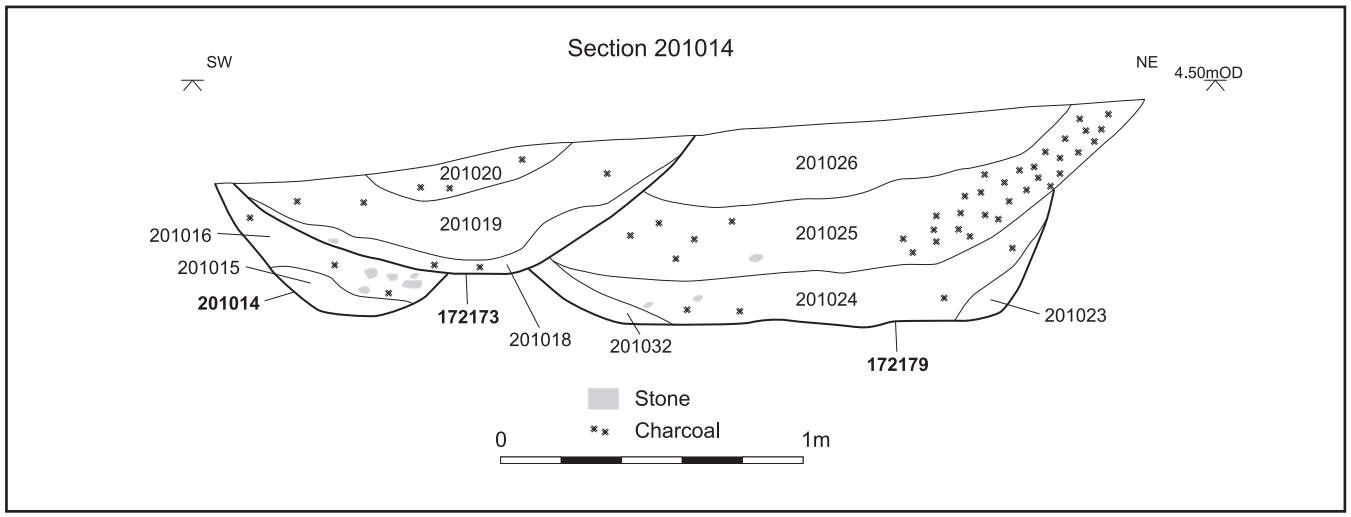


Fig 6.6 Section of medieval ditches 172173/172179 (Zone 3)

ditches had similar, rounded, U-shaped profiles and fills which contained pottery predominantly of 11th–13th-century date, along with small quantities of fired clay and animal bone.

Several areas of trampling or disturbance (172090, for example) were recorded adjacent to the enclosure and other ditches, and this probably indicates the presence of animals and the likely association of the farmstead, or at least this group of enclosures, with pastoral rather than arable agriculture, which fits with the idea of 'inning' the salt marsh for grazing.

Curvilinear enclosures

Immediately to the south of Early Bronze Age monument 193165 was a small complex of enclosures defined by shallow curvilinear ditches (Fig 6.5). These ditches appeared to respect the earlier monument, but one cut through the outer ditch, suggesting that this had largely silted up though the remains of an inner bank or low mound survived. One group of ditches (172042 and 172057) formed a U-shaped enclosure measuring approximately 20m by 15m, aligned north-south, with a single internal division and an apparently open end to the north – although this may have been partly closed off by the surviving mound of the Bronze Age monument. A small C-shaped enclosure (172025) extended to the west and appears to have been an integral part of the arrangement, though the stratigraphic relationship between the U- and C-shaped elements was unclear. All of the enclosure ditches were narrow and fairly shallow, (0.12–0.47m deep) and contained relatively few finds.

Iron Age pottery was recovered from several of the ditches, but the very small quantity and abraded nature suggests that this material was residual. In contrast, slightly larger quantities of a mid-11th–mid-13th-century pottery came from ditches 172042 and 172057 on the eastern side of the U-shaped enclosure, and this is likely to provide a date for the complex, all elements of which are of broadly the same phase. Although stratigraphic relationships were unclear, it is thought likely that these curvilinear enclosures represent an early phase of medieval activity, most likely associated with animal husbandry, predating the establishment of the larger, rectilinear enclosure/field system (see below).

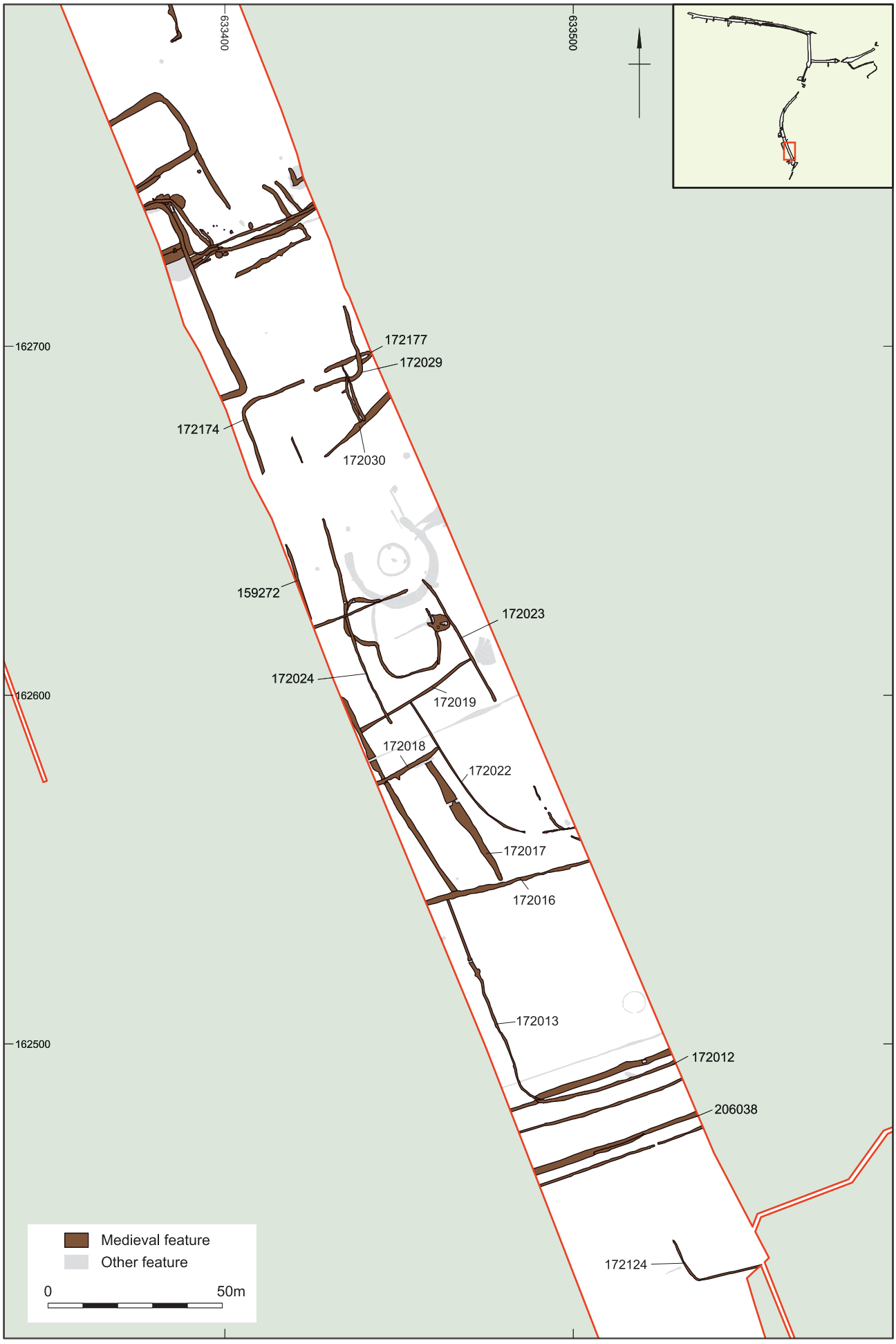
Sub-rectilinear enclosures/fields

The pattern of sub-rectilinear land divisions was most evident in the central area of Zone 3, where a series of ditches formed elements of an enclosure or field system which extended beyond the limits of excavation to the east and west (Fig 6.7). The general layout and lack of clear stratigraphic relationships between the various ditches suggests that the overall system was broadly of one (mid-11th–late 13th century) period, though possibly of two phases, and may have been added to and extended in piecemeal fashion rather than in episodes of wholesale replacement. This contrasts with Farmstead A to the south where there is clearer evidence for such replacement, though this may reflect a chronological difference between the two areas, with Farmstead B perhaps seeing a somewhat shorter period of use.

The sub-rectilinear land divisions were defined by a number of ditches on different alignments. Five ditches were aligned north-east to south-west, all of which were relatively shallow and had open V-shaped profiles with a maximum depth of 0.5m. A further six ditches, aligned north-west to south-east, had similar profiles and a maximum depth of 0.9m.

The core of the system appears to have been a large enclosure or field approximately 150m long and at least 50m wide. This was defined by ditch 172016 to the south, 159272 to the west and 172177 to the north, with 172174 forming the north-west corner (Fig 6.7). Although the gap in the west side between ditches 159272 and 172174 was probably a result of truncation, there was a 6m-wide entrance between ditches 172174 and 172177 in the north side. The north-west corner of the enclosure, formed by ditch 172174, respected (or was respected by) the south-east corner of enclosure ditch 172173, the latest of the northern enclosures,

Fig 6.7 (opposite) Plan of medieval farmstead B, phase 2 (Zone 3)


633400
633500
162700
162600
162500
172177
172029
172174
172030
159272
172023
172024
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172018
172022
172017
172016
172013
172012
206038
172124
Medieval feature
Other feature
0
50m

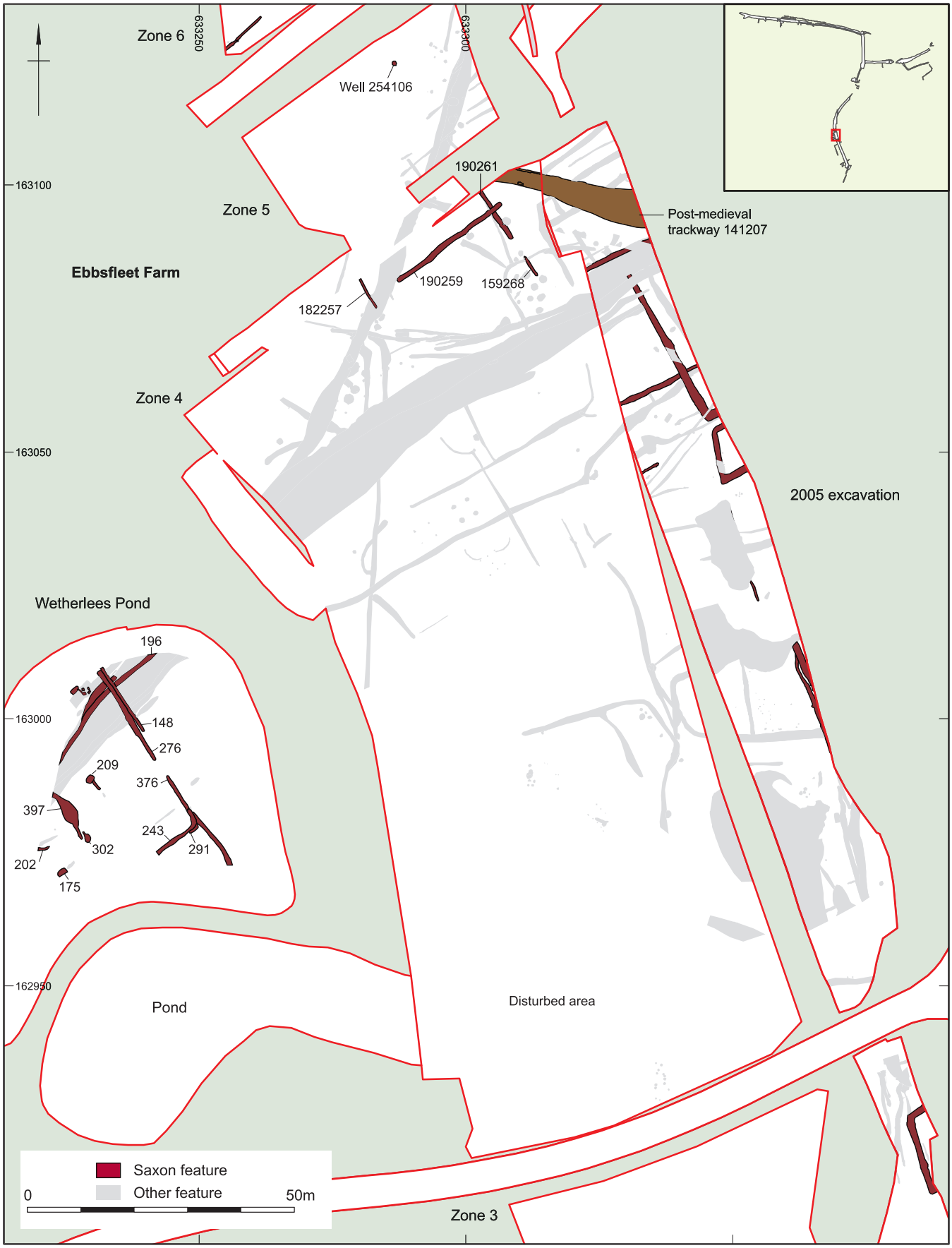

Fig 6.8 Plan of medieval and post-medieval features in Zones 4, 5 and Weatherlees Pond

indicating that the two were broadly contemporary (see above). Within the enclosure or field were a number of sub-divisions, of more than one phase, represented by ditches which include 172017, 172019, 172023 and 172024, with another group immediately to the south-east of the entrance; L-shaped ditch 172029 in this area is most likely an earlier feature (see Fig 6.5).

As noted above, it is probable that the central mound of Early Bronze Age monument 193165 survived as a low earthwork, and medieval ditch 172023 appears to have been interrupted where it crossed the monument, perhaps rising (and thus leaving no trace) where it cut through the mound.

Northern ditches

Further north, beyond the northern group of enclosures, was a semi-rectilinear though somewhat irregular layout of shallow ditches (172043, 172163, 172164 and 172165), the majority aligned NW–SE. Feature visibility was poor in this area and it is not certain that all of the elements of this ditch or enclosure system were identified (Fig 6.5). However, the sparse pottery recovered does indicate a medieval date and it is very likely that the ditches were broadly contemporary and formed part of Farmstead B.

Southern boundary

As many as five parallel ditches aligned roughly NE–SW probably formed the southern boundary of the medieval farmstead, this boundary recut and re-established over time. However, the only datable find recovered was a small abraded sherd of Roman pottery and the likelihood remains that one or more of these ditches was of earlier date, contemporary with the Late Iron Age–early Roman ditch and ring-gully immediately to the north (see above).

The suggested boundary ditches were relatively shallow and similar in form (Fig 6.7). The deepest ditch (206038) was 0.4m deep and had an open V-shaped profile with a single fill. One of the ditches, 172012 (with 172013), formed a rectilinear enclosure that cut through another of the boundary ditches and may represent a later expansion of the rectilinear land divisions (see above) southwards towards the edge of the farmstead. Still further to the south, ditch 172124 may have been a subsequent extension to this or have been related to the farmstead to the south.

Zones 4, 5 and Weatherlees Pond

Three or possibly four features at the north end of Zone 4 were of medieval date, and are assigned to the 13th century on the basis of the pottery recovered from one of them. All are narrow shallow ditches, possibly defining small plots or enclosures, though their extent to the north and south is no longer clear as a result of later truncation. Ditches 159268 and 190261 were separate lengths of what was probably a single NNW–SSE aligned ditch, with 182257 lying parallel and approximately 30m to the west (Fig 6.8). At right angles between these two ditches was ditch 190259, perhaps the southern boundary of a plot to the north.

A relatively small, circular feature, 254106, towards the northern edge of Zone 5, had near vertical sides and was hand-excavated to a depth of 1.4m and augured to 5m, though it was not clear that the base had been reached (Fig 6.9). It contained late medieval pottery (15th–16th centuries) and a deliberate dump of oyster shell had been made in the top of the pit. This feature was probably a well, perhaps associated with a precursor to Ebbsfleet Farm. Intrusive sherds of later medieval pottery were recovered from two features towards the eastern edge of Zone 5, but the pottery did not occur in large enough quantities to enable these features to be dated confidently.

Clear evidence of a medieval field system, probably related to a medieval farmstead located to the north-west, in the area of the current Ebbsfleet Farm, was recorded on the Weatherlees Pond site. Nineteen features were dated to the medieval period and included a number of field or enclosure ditches, gullies and pits.

Enclosures

The medieval enclosure ditches formed a rectilinear pattern that had a north-west to south-east alignment. This extended across the length of the stripped area for 40m; several phases were represented but are probably broadly contemporary. For example, ditch 276 was recut by 148 on its eastern side and ditch 291 was recut on the same alignment as ditch 243. A possible entrance, measuring 3.6m wide, was formed between ditches 276 and 376, but this gap may have been the result of truncation in this area. Both possible terminals

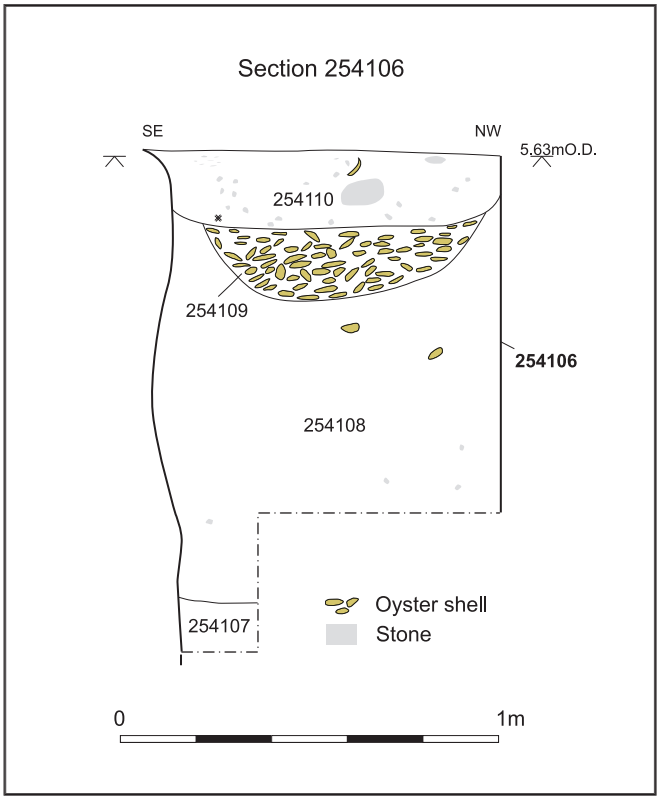

Fig 6.9 Section of medieval well 254106 (Zone 5)

Pl 6.4 Medieval pit 302 (Weatherlees Pond; view from south)

were shallow (0.05m and 0.15m deep respectively) and contained naturally derived deposits. Towards the southern edge of the site was a later north-east to south-west ditch 243, which cut ditches 291 and 376, and represents an addition to the enclosure system. The broad pattern of medieval enclosures suggests gradual development and modification of the ditch system.

Pits

Two medieval pits, 302 and 397, were recorded in the south-west corner of the site. The pits were in close proximity, pit 302 was 6m south of 397, and both were oval in plan and had vertical to undercut sides; contemporary gullies appeared to drain into the pits. Pit 397 was the larger of the two, measuring 5.17 x 2.35m and 1.7m deep. Waterlogged deposits were recorded in the base of the pit, and a possible posthole was recorded cut into the side of the pit. Pit 302 was smaller (0.9m deep) and a shallow gully drained into the pit from the north-east. A large piece of sandstone was recorded on the base of the feature (Pl 6.4). The function of these pits is unclear, but they may have waterholes or wells.

Zone 6

The dark earth deposit (170028) which lay within the lowest-lying part of the area, approximately 100m from the southern end of the zone, sealed features of late Roman date. Deposit 170028 covered a somewhat irregular area measuring around 85 x 60m and probably formed through the accumulation of colluvium, which was also present on the slope of Ebbsfleet Hill in the south of the zone (as layer 170010), interleaved with layers containing Late Iron Age–Roman refuse from the former settlement, the deposit being later reworked through ploughing. Finds recovered through the initial test pitting and subsequent careful machining of dark earth deposit 170028 ranged from the Bronze Age to the medieval period, and included relatively large quantities of metal finds of various dates.

Several NW–SE aligned ditches on the southern slope were the only features that cut through colluvial

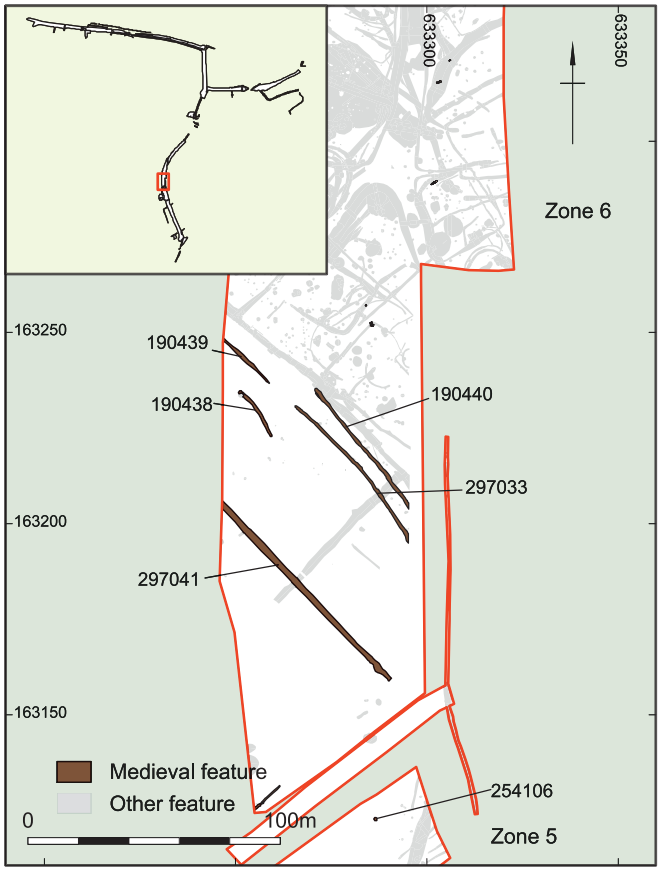

Fig 6.10 Plan of medieval features in southern part of Zone 6

layer 170010 and their layout closely reflects some field boundary elements shown on the 1st edition OS map. They also follow the trend of the Roman features in this area, most probably reflecting the topography, but possibly also the presence of long-lived boundaries which may have survived as hedges, for example. Ditch 297041, the southernmost and largest, was up to 1.8m wide and 0.6m deep and may have been a significant boundary; it contained a few sherds of medieval pottery of probable 12th–mid-13th-century date. To the north, ditches 190440 and 297033, less than 1m wide and 0.3m deep, were parallel just over 3m apart and seem to have defined a trackway, which partly continued to the west as ditch 190439 (Fig 6.10).

Zones 9–11

Medieval features were almost entirely limited to Zone 11, particularly the northern end, since despite the discovery of field boundary ditches of this date to the east of Zones 9 and 10 during earlier pipeline works (Egging Dinwiddy and Schuster 2009, 138), these features did not continue into the EKA2 area.

On the Sevenscore scarp slope at the northern end of Zone 11 were a group of rectilinear ditched enclosures aligned WNW–ESE, probably part of a single complex, overlying ditches of Iron Age and Roman date. Dating material was quite sparse, but ditches 159278, 155021, 159282 and 159291 all contained medieval pottery, of broadly mid-11th–mid-13th-century date (Fig 6.11).

The enclosure complex covered an area of 40m by at least 70m, continuing beyond the limit of excavation to the west. Ditch 159278 marked the northern extent, with L-shaped ditch 159291 defining the southern and western sides; all of these ditches were approximately 1m wide and up to 0.4m deep. Ditch 159283, up to 1.5m wide and 0.3m deep, formed what appears to be the eastern end of a sub-enclosure, 18m wide, located close to the southern part of ditch 159291. Ditches 159282 and 159292 represent further internal division, but irregular features 155021 and 159280, the former containing medieval pottery, are almost certainly natural run-off channels which have formed on the relatively steep slope.

Ditch (189015), in the eastern arm of Zone 11, on a similar alignment to those at the northern end of the Zone 11 (north) contained no finds, but it cut pit 189018 of early or mid-Saxon date. A pit (156070) which in turn cut the ditch is likely to belong to a similar broad date range, although it contained several sherds of (residual) Iron Age pottery.

Zones 17 and 18

Further up the scarp slope in Zone 17 the small number of features included one of medieval date. Pit 147029 was situated alongside the two late Saxon pits discussed above (see Fig 6.12 and Chap 5). It was sub-circular in shape, approximately 1.5m across and 1.1m deep, with steep, irregular sides and a flat base. Two of the lower fills contained a few sherds of medieval pottery dated to the mid-11th–early 13th century, as well as fragments of a knife and a few pieces of animal bone and shell, suggesting a continuation of activity from the late Saxon period, in this case possibly associated with the

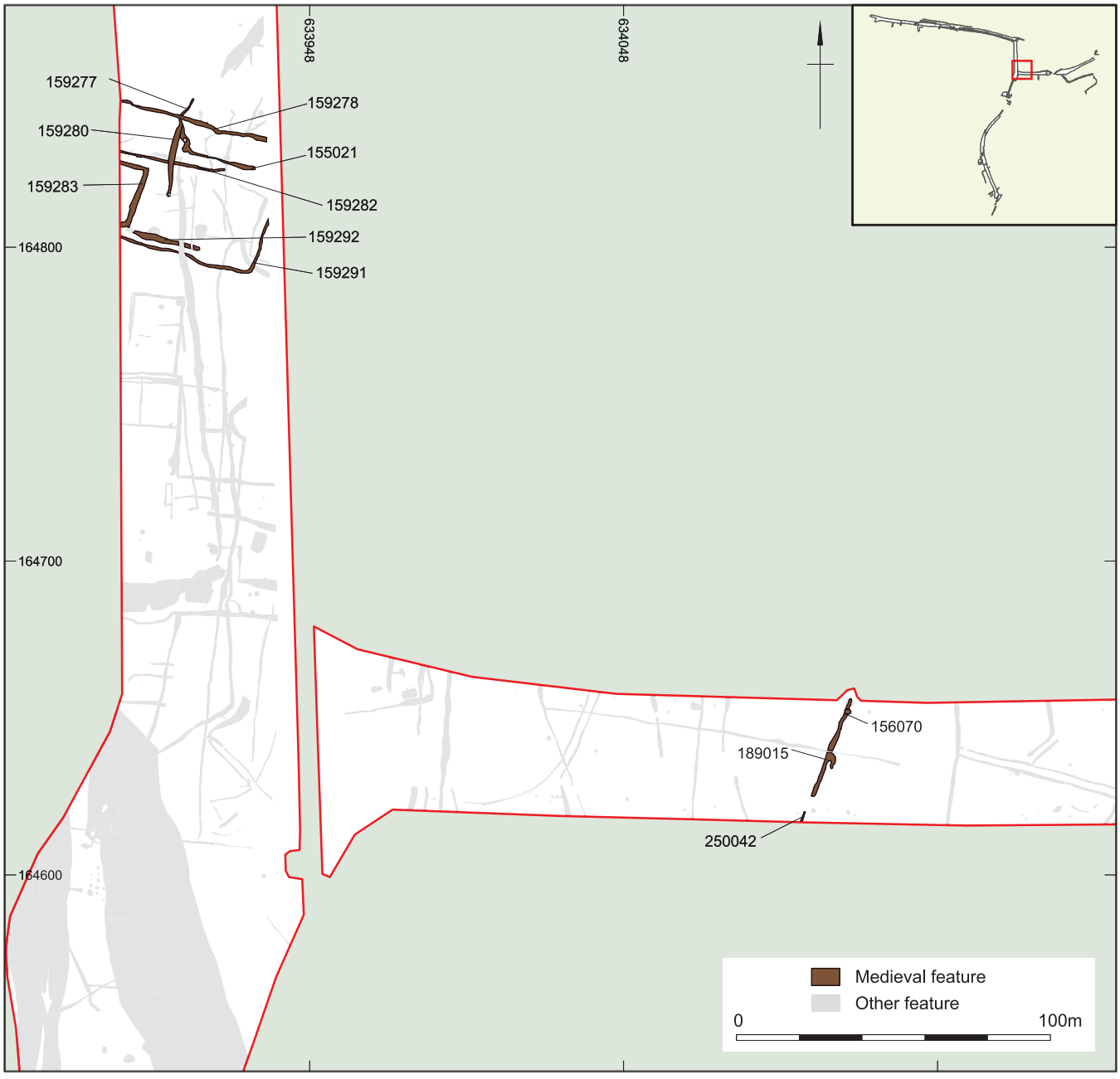

Fig 6.11 Plan of medieval features in Zone 11

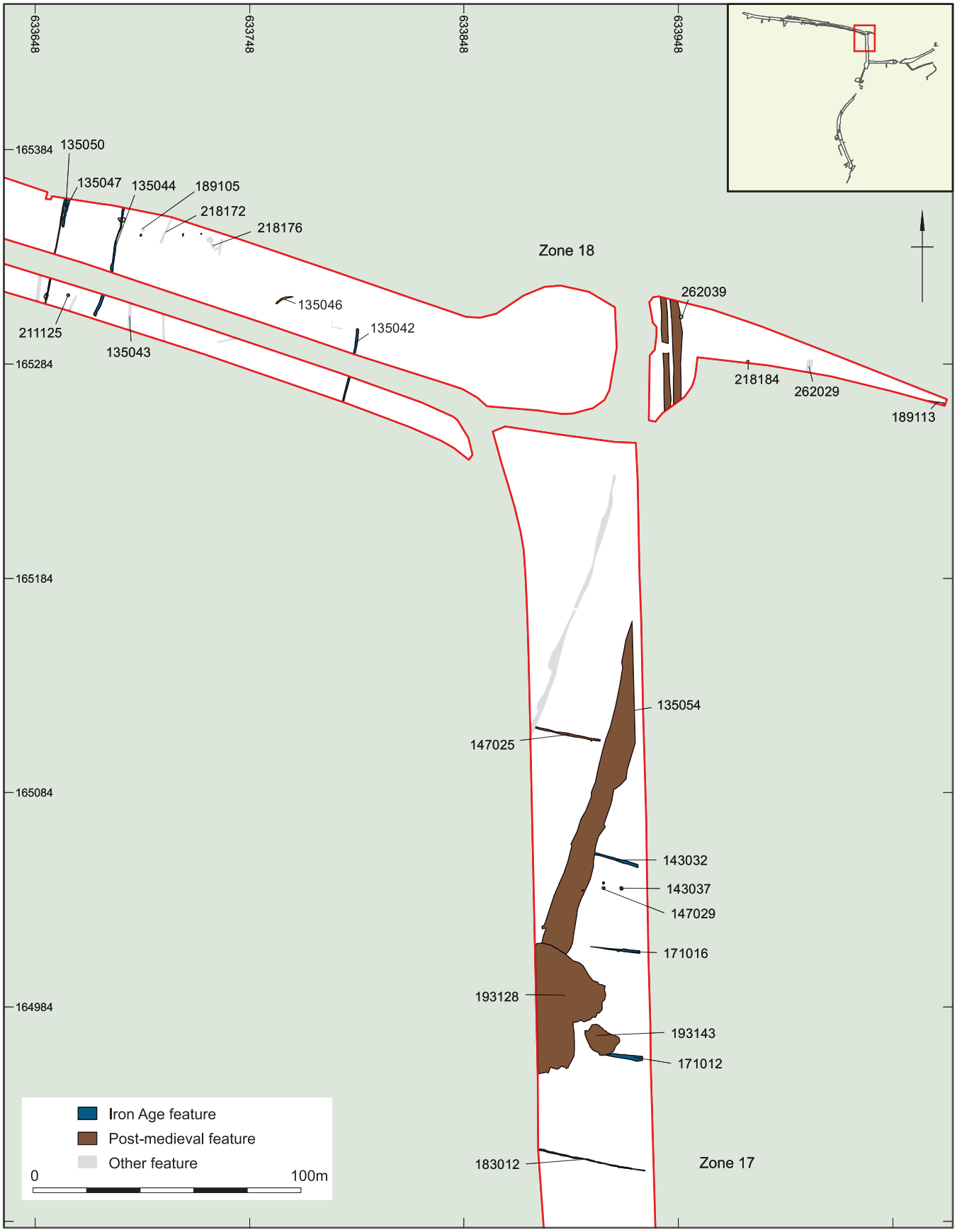

Fig 6.12 Plan of post-medieval quarries, trackway and other features in Zones 17 and 18

enclosure complex at the north end of Zone 11 some 200m to the south.

A very small number of generally ephemeral, undated linear features aligned N–S were recorded in Zone 18, on the flatter ground near the top of the scarp slope (see Fig 6.12). These features may be medieval and related to the enclosures in Zone 11, though they could be earlier or later in date.

Zone 19

Three lengths of ditch (126232, 126281 and 262041, not illustrated) on north-south and east-west alignments were the only features in Zones 19 and 19a that dated to the medieval period. The ditches were all fairly irregular and fairly shallow in depth. They may have been field or enclosure boundary ditches, but the lack of other features of this period in the vicinity means that it is difficult to interpret their place in the medieval landscape.

Zones 21–22

The only features possibly of medieval date were four ditches in Zone 22 on the same alignment (NNE–SSW or ESE–WNW), located to the south of the Iron Age horseshoe-shaped enclosure 290420 (Fig 6.13, see also Chap 3). These ditches included an L-shaped ditch (290584) which cut the ditches of the eastern side of the Iron Age enclosure and may have formed part of an enclosure. Ditches 290595, 290596 and 193085 may have formed sub-divisions to the west of the enclosure and ditch 195053 possibly formed the western side of the enclosure. Dating evidence was sparse, with only ditches 195053 and 193085 containing sherds dating to the late 11th/early 12th century and late 11th/early 13th century respectively. However, the close proximity of the ditches to each other, and the similarity of their alignments, suggest that they were all broadly contemporary.

A few sherds of medieval pottery were recovered from the surface of the features making up the Iron Age field and enclosure system, and a moderate quantity of medieval pottery was also recovered during fieldwalking in Zone 22. Although this is most likely the result of manuring of fields the material could have derived from some other medieval activity in the vicinity not represented by surviving features.

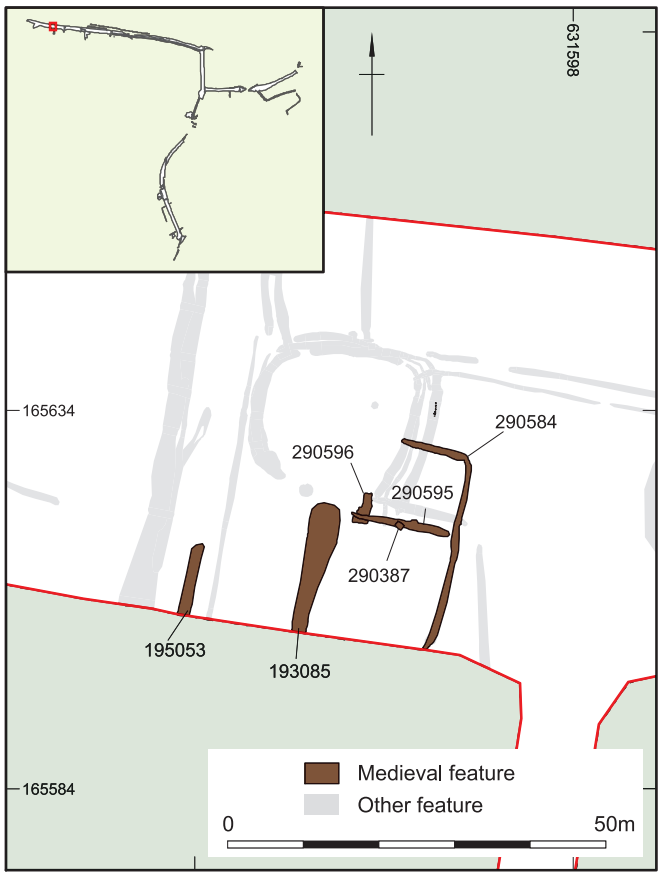

Fig 6.13 Plan of medieval features in Zone 22

Discussion

Medieval activity on the EKA2 was confined almost entirely to the Ebbsfleet peninsula, in Zones 1–5, the southern end of Zone 6 and the Weatherlees Pond site, though the Anglo-Saxon trackways in Zones 19 and 20 on the Chalk ridge are likely to have continued in use throughout the medieval period and beyond, shifting in course over time (Fig 6.14). Elsewhere, the route of the EKA2 avoided any historic village centres and lay within what are, and have been (since the Roman period) sparsely populated parts of Thanet, comprising mainly treeless downland fringed to the south by former marsh.

In Zones 1–3 at the southern end of the Ebbsfleet peninsula were elements of probably two broadly contemporary farmsteads, the use of both spanning the 11th–14th centuries, with some activity possibly persisting into the beginning of the 15th century. Two separate sequences of small enclosures and fields were identified, one in Zones 1 and 2 and the other in Zone 3, with the later, 13th–14th-century phase reflecting limited expansion of the earlier ditch systems. This later development included several slightly larger and more regular fields and enclosures; some of these as well as several of the earlier enclosures are likely to have been associated with animal husbandry. The principal structures are thought to have been located just beyond the limits of excavation, to the east in Zones 1–2 and the west in Zone 3. What appears to have been a small, slightly sunken structure in Zone 1 is likely to represent an ancillary building, though its precise function remains uncertain, and three patches of cobbles in Zone 2 may also have been associated with similar, insubstantial structures. However, postholes perhaps indicative of something larger were recorded in the adjacent excavations in 2012 to the west.

In general, the focus of activity in the medieval period appears to have been along the slightly higher, east side of the peninsula facing Pegwell Bay, rather than the west side adjacent to the Wantsum Channel, where the rate of silting was increasing and land reclamation was

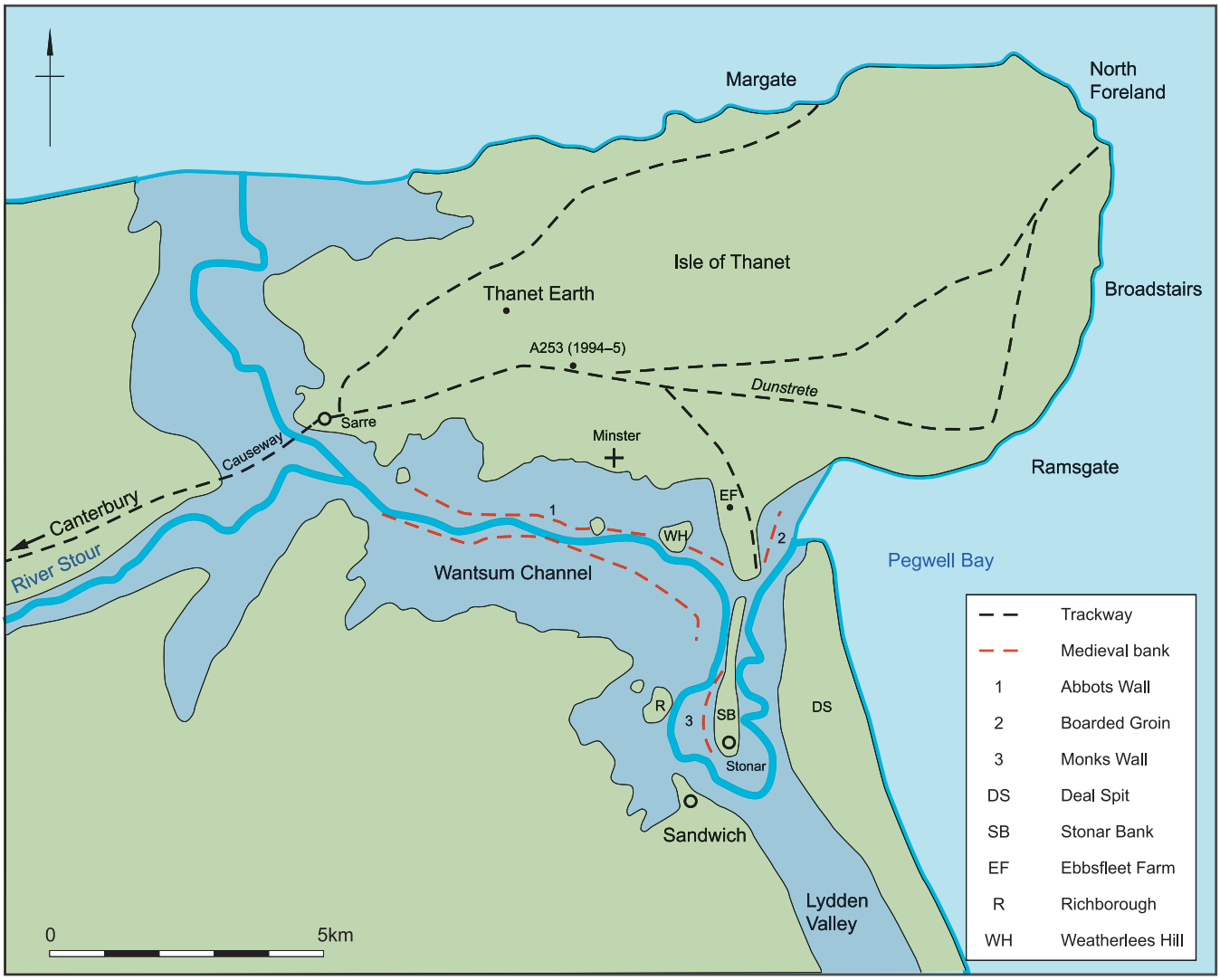

Fig 6.14 Selected medieval settlement remains on Thanet, shown in relation to probable trackways and reclamation banks within the Wantsum Channel

underway (see below). A trackway may have developed along the east side of the peninsula at a relatively early date, perhaps becoming what is now Ebbsfleet Lane which, until construction of the EKA2 blocked the route, ran northwards to the base of Sevenscore where it joined an east-west lane between Minster and Cliffs End. In the medieval period the postulated trackway would only have run as far south as the tip of the Ebbsfleet peninsula, then largely surrounded by water and marsh, providing access to the farmsteads there, that at the southern extremity partly exposed in Zones 1 and 2 and probably lying beneath present-day Ebbsfleet House.

In Zones 4–5 and the Weatherlees Pond site was a further sequence of field or enclosure boundaries and a well, this group of features of slightly later date than those to the south, and probably spanning the 13th to early 15th centuries. Other elements of this group of ditches were identified in adjacent excavations to the east in 2005 (Egging Dinwiddy and Schuster 2009) and also during more extensive evaluation in 1992 prior to construction of the Weatherlees Wastewater Treatment Works (Hearne *et al* 1995). This northern complex of features was separated from those to the south by a lower lying, perhaps periodically flooded, area (at the junction of Zones 3 and 4), and it is possible that they were related to a precursor of present-day Ebbsfleet Farm, which occupies a low hill to the north-west, adjacent to a small inlet and close to the west side of the peninsula (Fig 6.14). A farm is known to have been here from at least as early as the mid-18th century (Lewis 1736), and late medieval pottery from the top of the infilled well on Zone 5 and a short length of early post-medieval metalled track on Zone 4 suggest the possibility that there may have been continuous occupation on or around the site of the existing farm since the 13th century.

There were very few pits associated with any of the three suggested farmstead sites, unless they lay beyond the areas excavated, and no substantial, sealed assemblages of domestic rubbish were recovered. The quantities of pottery from the ditches were moderate and of unexceptional character, as might be anticipated in this general location. Furthermore, there were few other finds – a couple of coins, fragments of a gilded belt plate and a decorative binding, two spindle whorls and a loomweight, a probable knife blade and a possible

whetstone. Animal bone was sparse, and the soil conditions encountered were not conducive to the survival of good palaeoenvironmental remains. Nevertheless, on the basis of the available evidence, and the layout of ditches and enclosures, the settlement on the Ebbsfleet peninsula can be interpreted as representing low status farming activity, perhaps occasionally supplemented by fishing, with relatively little to indicate anything other than local contacts. Indeed, there were no urban centres in Thanet during the medieval period, with settlement remaining dispersed and comprising a scatter of villages and farmsteads, some of the coastal ones engaged in fishing. There appears to have been little direct contact even with the nearby ports of Sandwich and Stonar to the south and the major centre at Canterbury further to the west (Fig 6.14), though pottery from the Canterbury/Tyler Hill area constituted the overwhelming majority of the medieval ceramic assemblage, with a small element in the 11th–mid-13th century deriving from sources in south Kent and, rarely, East Anglia, north France and Flanders. Later medieval regional and continental imports are even scarcer, represented by a total of only four pots, from London, Scarborough and Flanders. It was not until the mid-17th century that Ramsgate, Broadstairs and Margate began to develop as small towns, with fishing becoming more important, and Thanet started to emerge from relative isolation.

Throughout the medieval and earlier post-medieval periods, agriculture was the major contributor to the island's economy, with sheep and the production of wool being of particular importance. There was insufficient animal bone to permit meaningful analysis, but the few plant remains suggest the continued cultivation of free threshing wheat with hulled barley, rye, oat, pea and bean also represented. The medieval marine shell assemblage is relatively small, mostly oysters and mussels, the oysters coming from sheltered bays and inlets, and rather smaller in size than those of Roman and Anglo-Saxon date. The dominance of blackthorn-type roundwood in both the Anglo-Saxon and medieval charcoal assemblages indicates the presence of some scrubby woodland or hedges, at least on the chalk soils, but it is likely that generally little woodland survived.

The development and changes in medieval settlement seen on the Ebbsfleet peninsula need also to be considered in the light of the transformations that were taking place along either side of the Wantsum Channel and around Pegwell Bay as a result of land reclamation, which began in the 11th century, within a few decades of the Norman Conquest. The chronology and extent of the changes to Thanet's coastline and, in particular, the Wantsum Channel, have been much debated over the past 275 years since Lewis (1736) and later Dowker (1872; 1897) presented their thoughts, and there is no consensus yet on the detailed topography and navigability of the Wantsum Channel between the later Iron Age and the late medieval period. For example, differing views along with summaries of the evidence are given by Perkins (1999; 2007), MoLAS (2003) and Moody (2008, 35–52) in recent reviews which consider the history of the Wantsum Channel, from the north near Reculver to the east between Ebbsfleet and Sandwich (see also Chapter 1). This is not the place to revisit these discussions in detail, but they are of relevance to the history of medieval settlement, particularly around the southern fringes of Thanet (see, for example, Clarke *et al* 2010 on Sandwich).

'Innings' to extend and improve agricultural land were accomplished through the construction of earthen embankments along both sides of the Wantsum Channel, to the south of Cliffs End around Pegwell Bay, and in the vicinity of the medieval port of Stonar which was established on a gravel bank (the 'Stonar Bank') to the north of Sandwich (Fig 6.14). These works were undertaken by the Canterbury houses of Christ Church and St Augustine, who in 1027 had been granted lands at Minster and Monkton formerly held by St Mildred's Abbey. The Abbot's Wall was the major earthwork constructed around the southern edge of Thanet where it bordered the Wantsum Channel, with the Boarded Groin extending north from the River Stour on the east side of the Ebbsfleet peninsula to Cliffs End. The 'inning' and draining of these areas, which appear to have been, for the most part, gently sloping tidal mud flats, was broadly contemporary with the 11th–14th or early 15th-century span of occupation of the three farmstead sites identified on the Ebbsfleet peninsula. Areas of former open water or marshland bordering the Ebbsfleet peninsula were made available for grazing, with the central, deeper part of the Wantsum Channel remaining navigable by boats throughout this period. However, it appears that towards the end of the 13th century and thereafter the deposition of silt in the Wantsum Channel increased significantly as natural scouring decreased – probably the result of more than a single factor, eventually blocking the entrance to the channel between the southern end of the Ebbsfleet peninsula and the Stonar Bank. This closed the Wantsum Channel to larger, merchant ships and left only one entrance open on the east side, approximately 3km to the south between Sandwich and Stonar. Further silting and subsequent reclamation took place, hastening the end of Thanet as an island, and the construction of a bridge between Sarre and the mainland at the end of the 15th century supplanted the ferry which formerly operated there. By the time Leland visited in 1539–45 (Chandler 1998), the Wantsum Channel was no longer navigable by boat, but comprised an alluvial floodplain, in part cut by the River Stour which now made its way south to Sandwich Haven.

As noted above, the trackways running east-west just below the crest of the Chalk ridge in Zones 19 and 20 had their origin in the Anglo-Saxon period, with possibly one or more Roman precursors similarly aligned (Fig 6.14). This was the route followed by medieval *Dunstrete*, 'the street over the down', first recorded on a 15th-century map (Swanton 1975, pl 1). It ran from the crossing point on the Wantsum Channel at Sarre, then up and along the Chalk ridge to the settlements in the south-east part of the island. Later turnpiked, parts of this long-lived route subsequently

became fossilised in the 20th century in the A253. A few short lengths of ditch, some appearing to form part of at least one enclosure, were recorded in Zone 22, but no medieval settlement associated with this route was exposed on the EKA2. However, a complex of at least five buildings, two of them particularly substantial, lay within a pair of enclosures approximately 2km to the west on the A253 Thanet Way improvements, and these are thought to have been located adjacent to *Dunstrete* (Bennett *et al* 2008, 307–40).

The chronology of the albeit limited evidence for medieval settlement as recorded on the EKA2 matches well with what is known locally, regionally and nationally for population change and the accompanying changes in the patterns and density of rural settlement that occurred. An increase in population during the 11th–13th centuries led to previously marginal, often unused land being utilised for grazing animals or growing crops. However, these areas and their associated farmsteads and settlements were often the first to be abandoned from the beginning of the 14th century when the climate deteriorated and population declined as a result of famine and, subsequently, the Black Death. This pattern of rural change has been observed on medieval sites excavated along the route of High Speed 1 in Kent (Foreman 2011, 25), as well as locally on Thanet. Examples in the latter area include the medieval settlement investigated on the A253 Thanet Way improvements to the west of the EKA2, where occupation spanned the late 11th–mid-13th century but with a focus of *c* 1100–1250 (Bennett *et al* 2008, 307–40), and the farmstead at Star Lane, Westwood, where the period of occupation was later (but possibly shorter), between the early 13th and the mid-14th century (Egging Dinwiddy and Schuster 2009; Powell forthcoming).

The post-medieval and modern sites

Zones 4, 5 and Weatherlees Pond

A metalled trackway (141207) that crossed the north-east corner of Zone 4 and had been previously recorded to the east (Egging Dinwiddy and Schuster 2009), probably represents a late medieval or early post-medieval track from Ebbsfleet Lane to Ebbsfleet Farm on the west side of the peninsula.

A single, short line of World War II zig-zag trench survived in the north-west of Zone 5 (see Beamish, below).

Zones 17 and 18

Post-medieval activity was evidenced by two large chalk quarries (193128 and 193143) and a substantial sunken trackway (135054) (Fig 6.12), all clearly visible on aerial photographs. The quarries were situated within Zone 17 and are likely to be 19th century in date, comparable (or perhaps even equivalent) to the 'old chalk pit' shown on the 1st edition OS map immediately to the east of the excavated features, although they may date to earlier in the post-medieval period.

The sunken trackway appears to have provided access to the quarries and crossed Zone 17 and continued to the north-east into Zone 18 as 262039, where it bifurcated. The undulating nature of the base of the trackway may reflect the use of wheeled vehicles. An ephemeral NNE–SSW aligned feature may be the remains of a post-medieval hedgerow, having a very irregular profile, although it is possible that this feature is also part of the Iron Age field system discussed above.

Part of a system of World War II zig-zag trenches that formed part of the defences associated with RAF Manston (now Manston Airport) was revealed in the central northern part of Zone 18 (not shown on plan). Although visible on aerial photographs, the extent and layout of these trenches were less clear following the stripping of the topsoil, and they were subject to only very limited investigation due to the presence of contaminated material in the backfill. The three small sections investigated contained part of a roll of barbed wire, several cans, as well as a barrel containing oil and some asbestos.

Zones 19 and 20

A north-south metalled track (286065, not illustrated) towards the eastern end of Zone 19 corresponds in position to a trackway shown on the first edition OS map and is likely to be early 19th century in date or later. This track may have provided access between a road on the line of the existing A253 to the north and Thorne Farm or its predecessor to the south.

Further parts of the east-west aligned system of World War II zig-zag trenches were revealed in Zone 19 (Pl 6.5), and a 250m-long continuation of these trenches lay at the eastern end of Zone 20. At least one small, sub-rectangular feature along their north side may have been a weapons pit/bunker, but due to the potential presence of contaminated material was not excavated.

Zone 23

In Zone 23 a small three sided, sub-rectangular foundation trench (141092) lay within the centre of barrow 195004 (see Chap 2, Fig 2.18). These insubstantial remains were associated with an outbuilding in the extreme north-eastern corner of the grounds of the Isle of Thanet Union Workhouse, as shown on the 1st edition OS map. Although no structure is illustrated on this map, the foundation was probably associated with the small Fever Hospital thought to have been in this location.

Also assigned to this period are two brick and concrete lined wells, which may have provided independent water sources for the workhouse and fever hospital. Two modern animal burials were also found on the southern side of ring-ditch 195004.

Pl 6.5 World War II zig-zag trench defences for RAF Manston (modern runway beyond), cutting across periglacial 'stripes' (Zone 19; view from south)

Discussion

Evidence for late medieval and post-medieval activity was extremely sparse and none can be directly linked to any known settlement, with the probable exception of the metalled trackway and small assemblage of pottery noted above from Zones 4–5, which is likely to have been associated with Ebbsfleet Farm. Elsewhere, the thin spread of pottery, clay pipe and metal artefacts, most notably coins, recovered as part of the preliminary surveys, can all be attributed to casual losses or the manuring of fields.

Most of the area covered by the EKA2 was given over to arable agriculture by this time, in the 18th century, and the absence of any associated ditches indicates that hedges were established to define field boundaries.

The only post-medieval features of any size were the chalk quarries in Zone 17 and the associated trackway which provided access to the largest of them. These quarries, although not closely dated, may have provided material for marling fields to improve fertility as arable replaced pastoral agriculture, or possibly the chalk was used for other purposes such as bedding material in tracks and floors. Post-medieval quarries were recorded in the chalk in several places elsewhere along the route, most notably in Zones 13 and 18, and examples have been identified from aerial photographs in the vicinity of Zone 19, forming a broad line along the scarp slope, though at least some deep features may represent solution holes, like that exposed in Zone 15.

The Isle of Thanet Union Workhouse, established in 1836 to the north of Minster, left a slight trace on the EKA2, in the form of the footings of a small building in Zone 23. The workhouse itself was of considerable size, designed for 400 inmates at a cost of £6583, and it survived in various guises, latterly as Hill House Hospital, a National Health Service institution, until it was closed in 1986 and demolished in 1989 (Gilham 1991). It is clear from Ordnance Survey maps that the footings in Zone 23 formed the northern extent of the fever hospital, established in an understandably isolated location approximately 200m north of the workhouse, with an adjacent well to supply water. Both were constructed within the area enclosed by a substantial Early Bronze Age ring-ditch, though it appears that this was entirely coincidental as it is likely that any remains of the earlier monument had been ploughed flat long before the workhouse complex was constructed.

World War II defences (Zones 5, 18, 19 and 20) *by Hugh Beamish*

Modern, 20th-century remains were exemplified by a series of World War II features, most associated with the defence of the important RAF airfield at Manston on the highest part of the island. Thanet and, in particular, Manston airfield were in the front line of Britain's defence, being close to the Thames, which provided the main route of 'enemy' attack on London, and at the south-eastern tip of England, closest to the Continent. In this location, the island was a prime target and a variety of installations were put in place to provide for its defence. The 'zig-zag' trenches (both linked and apparently discrete, of more than one form), other angular trenches and at least one small probable bunker and/or weapons pit, all recorded in Zones 18–20 along the south side of Manston airfield, were installed to help protect the RAF station from either airborne attack or landward invasion from the south. Further to the south, in Zone 5, were the slight remains of another 'zig-zag' trench, part of which was recorded during earlier excavations a short distance to the north-east, here apparently associated with the remains of a probable searchlight position and forming part of the coastal defences of Thanet (Egging Dinwiddy 2009, 145–6). The presence of contaminated deposits in the backfill of several of these defensive features precluded their investigation in anything other than a cursory fashion, but much could be gleaned from their layout and form.

The form of the features closely matches those types of defences recorded at many other RAF airfields and dating to between the summer of 1940 and 1943 (Clarke 2008). The 'zig-zag' trenches appear to be the earliest phase of features and almost certainly date from the summer of 1940 (Ramsey 1980, 146; Lowry 1995, 123). These trenches were arranged to protect the perimeter of the airfield and the defences are very likely to have incorporated barbed wire (this was present in one of the three excavated sections) and occasional weapon-pits or small, ad hoc bunkers built of a variety of available materials. The weapon-pits and small bunkers would have been used to site machine-guns or similar weapons including those removed from obsolete or unserviceable aircraft (Ramsey 1980, 149).

This earliest phase of construction was not set out according to any approved or central design and there are many variations according to the local resources available (Dobinson 1997, 48–9). Where possible, defences were sited to defend the airfield both from attack by enemy troops landing within the airfield and external attack. What was part of a continuous line of defences in Zones 18–20 appear to have been capable of this as they were sited close to the brow of the Chalk ridge along the southern perimeter of the airfield (Pl 6.5). The 'zig-zag' trenches can be discerned on an aerial photograph dated to August 1940 (Ramsey 1980, 147) extending east from the junction of the Way Hill and Thorne Hill roads, midway along Zone 20.

A Luftwaffe aerial photograph of October 1942 is not sufficiently clear to distinguish the 'zig-zag' trenches, but does appear to show some form of small structure or weapon-pit, just visible close to the junction of Zones 19 and 20. This corresponds with the location of an approximately sub-rectangular feature measuring approximately 12m by 6m recorded (but not excavated) on the EKA2 immediately to the north of the 'zig-zag' trenches. No walls or other structural features were visible in this backfilled pit, and no building material was noted, at least on the surface of the fill exposed. It is very likely that the earliest trenches of 1940 had been rationalised and strengthened to some degree between the autumn of 1940 and late in 1941 (Dobinson 1997, 20–4) and certainly included the installation of Pickett-Hamilton forts late in 1940 and early in 1941 (*ibid*, 20–4). This phase of development is the probable origin of the more sophisticated features seen in plan as open U-shaped trenches at, for example, the western end of the defences in Zone 20, and probably also accounts for the majority of the possible weapon-pits and small bunkers. Some of these later trenches may be 'seagull' trenches, a trench in the form of a flattened 'W', like those immediately to the west of the small structure or weapon-pit (see above), with a flat concrete roof covered in turf and supported on concrete pillars (Lowry 1995, 123). Other trenches may be alternative forms of 'developed' defences intended to provide interlocking arcs of fire forming a 'fire-plan' between mutually supported positions. These more complex features are characteristic of those prepared in the wake of the Taylor Report of September 1940 (Dobinson 1997, appendix II) which classed Manston as a Class I airfield (ie, within 20 miles of ports vulnerable to capture). It is possible that the rationalisation process included the backfilling of some earlier features.

None of the 'zig-zag' trenches are visible on an aerial photograph taken in October 1945, after the construction of a new crash runway between June 1943 and April 1944 (Ramsay 1980, 150–1), but some later developed trenches may just be visible. Trenches were, however, still present in April 1946, but an aerial photograph from 1961 shows that all trenches had been backfilled and the above-ground parts of more substantial structures had been removed.

Finds and environmental summaries

Medieval and later coins *by Nicholas Cooke*

Whilst the coins provide broad dates for features and deposits, and allow some comparison with other sites in the area, the small size of the assemblage means that the potential for further analysis is limited. The hammered silver medieval coins are all typical finds. The only other medieval coins and tokens of note are the jetons recovered from Zones 10, 12 and 21, all of which were common Nuremburg types.

A moderately large assemblage of post-medieval and modern coins was recovered from the excavations. Most of these were unstratified, their number undoubtedly swelled by the systematic use of metal detectors. They can tell us little about the archaeology of the area, although there are one or two interesting coins – notably the 1937 American one cent piece and the five centimes piece of Napoleon III.

Metalwork *by Ian Scott*

There was little significant metalwork of medieval date, and almost none at all from post-medieval features, although fragments of this date were relatively common, for example from colluvial layers in Zone 6. The largest medieval assemblage was from Zone 1, where objects from medieval contexts included a buckle plate (ON 116) from ditch 172116, and a length of copper alloy strip (ON 4352) and a fragment of copper alloy sheet with possible incised decoration (ON 4693), both from pit 175120. The strip was incised with a stylised bird and was presumably intended as a decorative binding but its precise use is uncertain. Other medieval finds include the point of a knife blade (ON 4612, pit 175161), two miscellaneous objects – an iron ring (ON 114) and an L-shaped object (ON 131) – and nine nail fragments.

Much smaller and generally undiagnostic groups came from Zones 2 and 3. Ditch 172031 in the latter zone produced a nail, four miscellaneous fragments, two unidentified fragments and prick spur (ON 102) of 11th-century date. Elsewhere, medieval metalwork consisted of small numbers of indeterminate or poorly stratified objects. A rare exception was a knife (ON 410) from an early medieval pit (147029) in Zone 17. More

notable individual pieces included a late medieval or early post-medieval book clasp (a stray find in Zone 10) and a medieval buckle from an upper fill of a Bronze Age ring-ditch in Zone 13.

Worked stone *by Ruth Shaffrey*

A total of 1.7kg (34 fragments) of lava were found in medieval contexts; these are all worn and non-diagnostic. A single unworked fragment of schist has one worn side suggesting use as a hone (ON 4039 from ditch 131018).

Miscellaneous finds *by Sue Nelson*

A bone spindle whorl was recovered from an early medieval ditch in Zone 3.

Medieval and post-medieval pottery *by John Cotter*

The period best represented in the entire post-Roman pottery assemblage (see Table 5.2) is the early medieval period (*c* 1050–1250). Evidence for medieval occupation, mainly in the form of farming activity, is heavily concentrated in the Ebbsfleet peninsula landscape unit which produced the bulk (65%) of the post-Roman pottery from the EKA2 scheme. Almost half of this came from Zone 3 alone. After this there is a modest and declining quantity of medieval wares (to *c* 1550) and a surprisingly small and fairly insignificant collection of post-medieval and Victorian wares (to *c* 1900).

Imports of the early medieval period (*c* 1050–1250), whether continental or regional, are comparatively rare here and nearly all examples are from Zone 3 on the Ebbsfleet peninsula. These mostly occur as fairly small sherds (mostly body sherds). Three jars in Saxo-Norman Thetford-type ware (LS10) are from early medieval contexts. These come from East Anglian sources including Ipswich and Thetford. Sherds from perhaps six vessels are present in red-painted whitewares from north-west France (EM11RP and EM11A.RP), including spouted pitchers. A small group of wheel-thrown north French/Flemish greywares – probably spouted pitchers – are typical of 12th-century contexts at Canterbury, as is a single sherd of yellow-glazed Andenne ware from eastern Belgium. Imports of the high medieval period (*c* 1250–1400) are even rarer and in equally poor condition. These include sherds from a couple of glazed and decorated jugs from London (M5), a jug from Scarborough (M11B) and a jug from Flanders (M14). The dominance throughout the medieval period of locally produced jars/cooking pots combined with the general paucity of either English or continental imports are consistent with a largely agrarian community of fairly low status. Although the post-Roman assemblage from the EKA2 scheme is small compared to urban centres in East Kent, such as Dover and Canterbury, where individual sites have produced much greater quantities of pottery, it does provide some useful insights, both spatial and chronological, into the range of ceramic material used in this essentially rural part of East Kent.

Ceramic building material and fired clay *by Cynthia Poole*

Ceramic building material (CBM) of post-Roman date amounted to 210 fragments, (9.2kg) and for the most part was post-medieval and modern rather than medieval. Roof tile and brick are the predominant forms of this period. No complete tiles or bricks were found, a half brick being the most complete item. Roof tile accounted for the greatest proportion of CBM numbering 132 fragments (2.55kg), followed by brick (57 fragments, 6kg). Bricks measured 58mm and 64–68mm thick and 108mm and 117mm wide. Roof tile measured 9–13 mm thick, with just a few examples of 15–19mm. No more than 20 fragments were judged to be of medieval date. Post-medieval floor and 19th–20th-century wall tile were represented by single fragments and water/sewer pipe of 19th–20th-century date by nine fragments. The field walking and test pitting assemblages are large (over 5600 fragments and over 77kg) and were dominated by post-medieval roof tile, with a little brick, a few modern stamped bricks and rare pieces of Roman tile.

The post-Roman tile occurred as a scatter over most of the zones rarely amounting to more than a handful of fragments weighing less than 200–300g. Only in Zone 23 was there a slightly denser concentration of around 50 fragments (5.5kg). There appeared to be no strong correlation between the medieval sites and the post-Roman tile suggesting that the excavated material had a similar origin as the field-walking assemblage. Both the fieldwalking and the excavated medieval and post-medieval assemblages are likely to relate to early modern agricultural activity particularly drainage and improvement of arable of late 18th–early 19th-century date.

Fired clay from medieval contexts amounted to 123 fragments (1.7kg), with the majority of contexts producing material concentrated in Zone 3, though the two individual largest groups were found in ditches in Zone 19. The assemblage from Zone 3 consisted of small fragments of oven and hearth structure, mostly with a single flat moulded surface but including hearth floor, wattle supported structure, oven plate and pedestal. The material from Zone 19, perhaps redeposited, included a large piece of wattle supported structure, oven wall with finger marks and possibly part of a pedestal.

Marine shell *by Rebecca Nicholson*

The medieval shell assemblage was relatively small, comprising a minimum of 555 identified specimens. The majority of shells from sieved deposits were oyster valves (MNI 194), with mussels also common. The few whelk,

red whelk, cockle and periwinkle shells may also represent consumed shellfish. The oyster shells are generally of the flat and round type typical of oysters found in sheltered bays and inlets, with a mean width for the left valve of 54mm, somewhat smaller in width and length than assemblages from the preceding periods.

Plant macrofossils *by Kath Hunter and Rebecca Nicholson*

A single early medieval sample was fully recorded, sample 5406 from ditch fill 189017 in Zone 11 (see Vol 2, Table 17.11, Fig 17.2). A few plant remains suggest the continued cultivation of free threshing wheat with hulled barley, rye, oat, pea and bean. Small quantities of spelt chaff may be residual but could also indicate the continued small-scale cultivation of the glume wheat, as has been suggested for other areas (Pelling and Robinson 2000). Samples taken to assessment level recording only contained similar assemblages of plant remains, for example, sample 5102, from ditch fill 141017 (Zone 3), included well-preserved cereals including wheat, oat and barley as well as Celtic bean and seeds of stinking mayweed *Anthemis cotula*, an indicator for the cultivation of heavier, clay-rich, soils.

Appendix 1

Summary of human bone (later prehistoric and Roman)

Table 3.7 Later prehistoric unburnt human bone

Context	*Cut*	*Deposit type*	*Phase*	*Quantification*	*Age/sex*
Zone 6					
132108	132107	R. (ditch)	LIA	*c* 3% l.	neonate *c* 2–4 weeks
153091	153098	R. (ditch)	LIA	*c* 8% s.	adult >40 yr. ??male
173286	173275	R. (pit)	E/MIA	1 frag. s.	adult >18yr. ??female
173287	173275	R. (pit)	E/MIA	1 frag. s.	juvenile *c* 7–8 yr.
176141	176140	inh. burial	IA	*c* 88%	neonate *c* 2–8 weeks
219100	219095	R. (pit)	E/MIA	*c* 2% a.	neonate 0–2 mth.
223106	223107	R. (ditch)	LIA	1 frag. u.	neonate 0–3 mth.
244190	244189	R. (pit)	IA	1 frag. u.	subadult/adult >15 yr.
247259	247232	R. (pit)	MIA	*c* 4% l.	adult >20 yr.
256038	256029	R. (pit)	E/MIA	1 frag. l.	adult >20 yr. ??male
258270	258230	R./?placed (post hole)	E/MIA	*c* 4% s.	subadult/adult *c* 15–30yr. ??female
288147	288146	R. (ditch)	M/LIA	1 frag. s.	adult >18 yr.
279148	279145	R. (pit)	MIA	1 frag. l.	adult >18 yr.
292076	292075	pit burial	M/LIA	*c* 54% a.u.l.	adult *c* 30–40 yr. Male
297079 inc. 297078	297080	inh. burial	E/MIA	*c* 60%	juvenile *c* 7–9 yr.
324006	324005	R. (ditch)	E/MIA	1 frag. l.	adult *c* 18–35 yr. ?male
328008	328007	R. (pit)	prehist.	*c* 3% a.l.	neonate 0–2mth.
331002	331001	R. (pit)	M/LIA	1 frag. s.	subadult/adult >13 yr.
Zone 7					
287046	-	R. (road metalling)	M/LIA	*c* 2% l.	adult >18 yr. ??male
Zone 12					
126013	136049	inh. burial	MIA	*c* 85%	adult *c* 21–25 yr. Male
126015	-	R. (colluvium)	MIA	1) 3 bones a.l. 2) 5%	1) infant *c* 2–3 yr. 2) adult *c* 30–45 yr. ??female
136030	136031	inh. burial	MIA	*c* 45%	infant *c* 4 yr.
136034	136033	inh. burial	E/MIA	*c* 85%	adult *c* 25–29 yr. Female
136036 inc. 136035	136037	inh. burial	E/MIA	*c* 35% a.u.l.	juvenile *c* 5–6 yr.
153012	153011	inh. burial	MIA	*c* 85%	subadult *c* 13–14 yr. ?female
153016	153014	inh. burial	MIA	*c* 25% s.u.l.	infant *c* 9–12 mth.
153027	153028	inh. burial	MIA	*c* 99%	adult *c* 40–50 yr. male
153039	153040	inh. burial	MIA	*c* 60%	juvenile *c* 7–9 yr. ??female
153039	153040	R. (grave)	MIA	1 bone u.	subadult/adult >15 yr.
153042	153043	inh. burial	MIA	*c* 80%	juvenile/subadult *c* 11–13 yr. ??male
153047	153048	inh. burial (prone)	MIA	*c* 75%	adult *c* 40–50 yr. female
153054	153055	inh. burial	MIA	*c* 70%	adult *c* 35–45 yr. Male

Pathology	*Comment*
mv – absence maxillary M3	1–2; fresh breaks
	1–2, dark stained
calculus	1–2, dark colour
	1–2; some loss in stripping
	taphonomy: canid gnawing
blunt weapon trauma – depressed fractures right & left parietals; mv – wormian bones	1; animal bone
	1–2, dark colour
compression fracture T12; healed fractures – 2 left & 2 right ribs, left fibula; sharp weapon trauma – L1; Schmorl's node – L5; plastic changes – humerus shaft; op – left s–c, right scapula, left proximal ulna, left wrist joints, left 1st C–MtC joint, both hip joints, left medial knee joint, 3 left & 2 right c–v joints, T4 & T6–12 bsm, L1–4 bsm, S1 bsm, T7–11 rib facets; pitting – both a–c joints, left acetabulum, right c–v, T8 & T11–12 rib facets; sbc – scaphoid; enthesophytes – iliac crest, femur shaft; mv – accessory transverse foramen (C)	1–2; *taphonomy:* canid gnawing axial & lower limb elements, head removed in antiquity
surface defects – distal femora	1–2; truncated in antiquity; horse
calculus; dental caries; apical voids; periodontal disease; secondary sinusitis; ddd – L5–S1; Schmorl's nodes – T7–8, & 11–12, L1–3; plastic change – ulnae shafts; mv – wormian bones, ossicle at asterion, variant M3	2–3
2) calculus; dental caries; periodontal disease; op – 1L bsm, right c–v, right scaphoid, left MtT–P, right proximal IP (foot); mv – congenital absence M3	2–3
calculus (deciduous); hypoplasia; *cribra orbitalia*; mv – wormian bone, variant deciduous canines	2–3
calculus; dental caries; apical voids; hypoplasia; periodontal disease; endosteal new bone; hyperporosity – maxilla; op – atlas anterior facet; cortical defect – right 1st proximal phalanx (foot); mv – metopic suture, wormian bones, ossicle at asterion, additional tarsal facet, bunionettes, ?coalition left 1st distal phalanx (foot)	4
	1–2; cut by grave 136033
calculus; hypoplasia; mv – wormian bones, bipartite canine root, septal aperture	3 machine damaged
	2–3
ante mortem tooth loss; calculus; dental caries; apical voids; hypereruption; periodontal disease; *cribra orbitalia*; spondylolysis – L5; fracture – left knee; osteoarthritis – T12 rib facets, 2 left carpals; Schmorl's nodes – T7 & 9; ddd – T8 & 10–12, L4–S1; op – T1–3, L & L4–S1 apj, T1–5 & 10–11 rib facets, T4, T6–10, L2–S1 bsm, 4 right & 2 left rib facets, glenoids, elbows, 2 left carpals, 2 left distal IP (hand), right 1st MtT–P; pitting – T7 rib facet; enthesophytes – right proximal humerus, patellae, calcanea; exostoses – right fibula; plastic changes – scapulae (bursitis?); cortical defect – 1st proximal phalanges (feet); mv – ossicle at lambda, ossicle at asterion, wormian bones, variant I2, Vastus notches, accessory transverse foreman (C7)coalition right calcaneum, fused 5th phalanges (feet)	1
calculus (incl. deciduous); hypoplasia; mv – wormian bones	
calculus; hypoplasia; impaction; *cribra orbitalia*; porotic hyperostosis; mv – bipartite canine root, variant I2s	2–3
periosteal new bone – left fibula; Schmorl's nodes – T6–11, L3–4; ddd – C5–6; osteoarthritis – T4–5 apj, T9 & 12 rib facets, left carpal; op – T8 apj, T4, T8, L3 bsm, T7 & 11 rib facets, 9 right & 7 left rib facets, left acetabulum, left distal ulna; pitting – T10 rib facet, left acetabulum; plastic changes – tibiae	2–3
ante mortem tooth loss; calculus; dental caries; hypercementosis; apical voids; periodontal disease; osteoarthritis – C3–4, L5–S1, T11–12 rib facets, 1 left & 1 right rib facets; ddd – C3–6, T3–12, L5–S1; ankylosis – L5–S1 apj; op – C1–2 anterior facets, C5–7 apj, T1/3/6–7/9 & 11 apj, L3 & L5 apj, L2–4 bsm, T1/6/9 rib facets, 9 left & 9 right ribs, glenoids, radii (elbows), 1st MtC–Ps, left hip, left knee; pitting	1–2

Table 3.7 (continued)

Context	*Cut*	*Deposit type*	*Phase*	*Quantification*	*Age/sex*
166001	166002	inh. burial (prone)	MIA	*c* 25% a.u.l.	adult *c* 30–45 yr. ?male
166004	166005	inh. burial	MIA	*c* 75%	adult *c* 45–55 yr. Female
166004	166005	R. (grave)	MIA	1 bone l.	subadult/adult >16 yr. ??female
268006	268005	?*in situ* (ditch)	LIA	*c* 18% a.l.	adult *c* 20–25 yr. Female
Zone 13					
126144	126141	R. (pit)	E/MIA	1 frag. s.	>10 yr.
126128	126127	inh. burial	MIA	*c* 58%	adult *c* 25–33 yr. ??female
126143	126141	?*in situ* (pit)	IA	*c* 65%	neonate *c* 5–6 mth ??female
130042	130038	R. (RB pit)	MIA	*c* 2% l.	adult 18 yr.
130044	130039	R. (pit)	MIA	*c* 1% l.	adult >18 yr. ?male
130080	134096	R. (ring-ditch)	E/MBA	*c* 2% l.	juvenile *c* 6–8 yr.
143212	134096	R. (ring-ditch)	?E/MIA	1 frag. s.	subadult/adult >15 yr.
156166	156169	R. (pit)	E/MIA	1 frag. l.	adult >18 yr.
159119 inc. 159129	159118	R. (pit)	IA	*c* 10%	adult *c* 35–45 yr. Female
159124 inc. 159128–9	159118	R. (pit)	IA	*c* 21%	neonate 1–2 weeks + intrusive subadult tooth
159129	159118	R. (pit)	IA	1 frag. u./l.	neonate (not = 159124)
159140	159139	R. (pit)	IA	*c* 1% s.a.	subadult/adult >15 yr.
166010	166009	?placed deposit	MIA	1 frag. u.	adult >25 yr. ??female
166111	166108	R.(ring-ditch)	BA	1% s.	adult *c* 18–35 yr.
168082	168068	R. (pit)	E/MIA	*c* 1% s.	subadult/adult *c* 15–25 yr.
173179	173161	R. (pit)	IA	*c* 6% s.u.l.	infant *c* 8–9 mth
173189	173188	R. (pit)	MIA	1 bone s.	subadult/adult >15 yr.
173193	173188	R. (pit)	E/MIA	*c* 2% s.	adult *c* 30–50 yr. ?male
174057	174060	R./?placed (SFB)	EBA	*c* 5% s.	adult >45 yr. ?male
174072/5	174060	R. (SFB)	E/MIA	*c* 40%	neonate 0–1 week ??female
174233	174231	R. (ditch)	MIA	*c* 2% s.	juvenile/subadult *c* 12–14 yr.
175154	175153	R. (pit)	MIA	2 bones u.	subadult/adult *c* 15–45 yr.
200066 inc. 200067	200062	inh. burial & R.	E/MIA	*c* 90% 4 bones u.l.	adult *c* 35–45 yr. ?male + R frags. 2nd adult >35 yr.
200089	200090	inh. burial	MBA	*c* 98%	adult *c* 60–80 yr. Male
203002	203001	inh. burial	MBA	*c* 34%	adult >20 yr. ??female
203073	203066	R. (pit)	LIA	4 frags. s.l.	MNI: adult *c* 25–35 yr. ??female
211065	211063	R. (ditch)	MIA	*c* 1% l.	adult >18 yr.
211071	211067	R. (pit)	E/MIA	1 frag. u.	subadult/adult >15 yr.

Pathology	*Comment*
– C7 apj, T1–4, T7 (apj), right s–c; enthesophytes – innominates, femur, patella; ossified thyroid cartilage; mv – wormian bones, congenital absence M3, enamel pearl, *os acromiale*, Vastus notch	
destructive lesion – L5 bsm; Schmorl's nodes – L3–4; ddd – 1T, L2; op – L2 & L5 bsm, T12 rib facet	3–4
ante mortem tooth loss; calculus; dental caries; apical voids; hypoplasia; hypercementosis; hypereruption; periodontal disease; fracture – left clavicle; Schmorl's nodes – T9–10 & 12; ddd – 1C, 4T, T9–S1; osteoarthritis – T10 rib facet, left tarsal; op – 1C, L1 (apj), 4T bsm, L1 & 4 bsm, 2 left ribs, shoulder joints, knees; pitting – T11–12 rib facets, right temporo-mandibular, acetabulae, left distal radius; enthesophytes – humeri, tali; cortical defects – left scaphoid, left navicular, MtT–Ps; mv – wormian bone, mandibular tori, bipartite canine root	2–3, Fe stain left humerus
calculus; periosteal new bone – left 3–5th visceral rib; Schmorl's nodes – T6–12, L2; op – C1 anterior facet, T6–9 bsm; plastic change – endocranial vault; mv – maxillary supernumery, cusp variations, atlas transverse process incomplete, C5 right transverse process absent, C6 transverse foramen diminutive	4
porosity – skull, long bones; flaring – long bone ends	2–3, copper alloy staining – vault
mv – wormian bone	5+
	5
	5
op – left glenoid	1–2
hypoplasia – deciduous	3–4 ?not spotted *in situ*
mv – coronal ossicles	3
sharp-weapon trauma	3–4
	2
	2
ante mortem tooth loss; dental caries; calculus; ossification nasal cartilage; op – left distal ulna, right 3rd MtC-IP joint, right 1st MtC-IP joint, right IP (hand), left proximal femur, right acetabulum, medial knee joints; pitting – right a-c joint; enthesophytes – iliac crest, patellae, tibia & fibula shafts, calcanea; mv – Vastus notch (right), emarginated (bi-partite) left patella, enamel pearl, acetabulae crease. R: op – distal IP joint (hand), left 1st MtT-P	4–5 *taphonomy:* R finger phalanx slightly charred (as dry bone)
ante mortem tooth loss; dental caries; dental abscess; extensive tooth wear; calculus; periodontal disease; healed fracture – right distal ulna; nasal infection? (guttering); osteoarthritis – C1-3, C5, T7 & 10, left hip, rigth knee, right 5th proximal IP joint (foot); ddd – C3-7, T6 & 10, L5; Schmorl's nodes – T9, L1-4; ankylosis – right auricular surface; calcified thyroid & rib cartilage; osteoporosis; ?*o.c. dessicans* – right femur (& ?left); coalition surfaces iliac retroauricular surfaces; ?cortical defects – patellae; op – shoulder joints, right elbow, right wrists, both hands (carpals, MtC, distal IP), knee joints, left Mt-P joint (foot), right distal IP joint, rib facets (left & right), C4 bsm, T1-6 bsm, T8-12 bsm, L1-5 bsm, L4-5 apj, S1 bsm; pitting – s-c joints, left glenoid, right distal radius, left proximal IP (foot), rib facets, L1-4 apj, humerus tubercles; enthesophytes – patellae, ischial crest, iliac crest, left scaphoid, left 5th MtC shaft, femur & fibulae shafts, right calcaneum; mv – absence man. left M3, metopic suture, occipital bunning, wormian bones, atlas bridging (anterior), cervical ribs (one ankylosed to 1st rib, other separate), Vastus notch (right)	2–3
mv – cusp variation, absence man. left M3	5+
	taphonomy: slight scorching one side bone (to dry bone)
	taphonomy: heavy scorching one end of bone (to dry bone)

Table 3.7 (continued)

Context	*Cut*	*Deposit type*	*Phase*	*Quantification*	*Age/sex*
220093	220092	inh. burial (prone)	MIA	*c* 96%	subadult *c* 14–16 yr.
221016	221014	inh. burial	MBA	*c* 68%	adult *c* 35–45 yr. Female
230116	230115	inh. burial	E/MBA	*c* 2% s.	infant *c* 2–3 yr.
230119	230118	inh. burial	E/MBA	*c* 7%	juvenile *c* 5–12 yr.
245106	211063	R. (ditch)	MIA		adult >20 yr.
246006	246008	R. (pit)	IA	2 frags. a.u.	adult >18 yr.
246012	246011	inh. burial	IA	*c* 92%	adult >45 yr. Male
246016	246015	R. (pit)	MIA	1 frag. l.	subadult/adult >13 yr.
248012	248013	inh. burial	IA	70%	juvenile *c* 7–8 yr.
248039	248037	inh. burial	IA	26%	subadult/adult *c* 16–25 yr. ?female
248059	248058	R. (pit)	IA	*c* 12% l.	adult *c* 18–25 yr. ?female
248064	248063	R. (pit)	E/MIA	*c* 1% s.	adult >18 yr.
248088	248087	R. (quarry pit)	IA	1) 1 bone a. 2) 1 frag. s. 3) 1 frag. s.	1) infant *c* 2–3 yr. 2) juvenile/subadult *c* 11–15 yr. 3) subadult/adult >16 yr.
248092	248091	inh. burial	IA	*c* 99%	subadult *c* 15–16 yr. male
Zone 19					
166101	166100	R.(pit)	?M/LIA	*c* 1% s.a.u.	infant *c* 2 yr.
166147	166146	R. (pit)	IA	1 frag. s.	juvenile/subadult *c* 5–18 yr.
205108	209243	pit burial	IA	*c* 93%	adult *c* 45–55 yr. male
253012	253011	R. (enclosure ditch)	LBA	*c* 8% s.	adult >40 yr. ?female
Zone 21					
125233	125232	?grave fill	?BA	1 bone s.	adult > 45 yr.
126181	126180	inh. burial	MBA	*c* 87%	adult *c* 45–55 yr. male
132094	132093	R. (pit)	?	*c* 16 frags. u.	> 5 yr.
136102	136103	inh. burial	LBA	*c* 80%	adult *c* 35–45 yr. male
136105	136106	inh. burial	LBA	*c* 12% a.l.	adult *c* 30–40 yr. male
153065	153066	inh. burial	LBA	*c* 48%	adult >50 yr. male
166093	166094	inh. burial	LBA	*c* 6% a.u. l.	adult >18 yr. ?male

Pathology	*Comment*
calculus; abnormal development *pars basiliaris*; spondylolysis – L5; ?fracture – medial condyle left tibia; plastic changes – left upper limb more gracile than right, clavicle shafts flattened p-d, tibia sabre-shin; cortical defects – medial clavicles; mv – pegged maxillary supernumery, cusp variations, atlas bridging (posterior)	3; fresh breaks & feet removed by machine
calculus; healed fracture – left ulna; pitting – left 12th c-v, 1T apj; op – C1 anterior facet; mv – cusp variations	4–5
	5+
	4–5
ante mortem tooth loss; dental caries; excessive tooth wear; dental abscess; maxillary fistula; ?nasal infection (guttering); o.c. dessicans – C2 articular surface; periosteal new bone – right tibia, left calcaneum; Schmorl's node – L2; op – C1-2 anterior facets, C6 bsm, right glenoid, left hip, right acetabulum; pitting – acetabulae; enthesophytes – calcaneum; mv – atlas bridging (posterior)	4–5 (root etching)
calculus (deciduous)	4
periosteal new bone – proximal femora, left tibia & fibula shafts	4–5
o.c. dessicans? – distal femora	2
	0–2
calculus; *cribra orbitalia*; periosteal new bone – right mandibular condyle, right calcaneum, right 3rd MtT, right 4th MtT, left navicular; new bone – left auricular surface, left distal tibia epiphysis; ?ankylosis – right 3–4th MtT; *o.c. dessicans*? – distal humeri; Schmorl's node – T6-L2; mv – wormian bones, atlas bridging (posterior), accessory transverse foramen (C6), septal aperture (left), Vastus notch	1–2
	2
	5
ante mortem tooth loss; dental caries; apical void (abscess); calculus; calcified thyroid cartilage; osteoarthritis – C1-7, 2T, left distal radius & ulna, right distal ulna; ddd – C3, 1T; op – 3T & 5L bsm, shoulders & distal humeri, left proximal ulna, both wrists, 1st right MtC-P, left distal IP (hand), right acetabulum, both medial knees, right c-v; pitting – both temporo-mandibular, left a-c & s-c, left glenoid, distal humeri, right proximal radius, right rib facet, left 11–12th c-v joints; cortical defect – 1st distal phalanges (hands); plastic changes – ?cultural modification parietal vault, humeri shafts; enthesophytes – iliac crest, proximal humeri, left 3rd MtC, femur shafts & proximal notches, left patella, distal fibulae, calcanea; sbc – right hamate, lunate & trapezium; mv – slight occipital bunning, wormian bones, plural mental foramen (left), mandibular tori	2
mv – wormian bones, ossicle at asterion	2
extensive tooth wear	4–5
ante mortem tooth loss (extensive); calculus; fracture right 1st MtT, ?left 2–3rd MtT; ankylosis right 1st MtT-P joint, left 2nd–3rd MtT; periosteal new bone – left 2–3rd MtT; osteoarthritis – right hip, right c-v, C3-5, T5, T10 rib facets; ddd – C3-7, L1 & 4; plastic changes – T2 spinal process; osteoporosis; vertebral body collapse – L5; op – both scapula, left acetabulum, left & right c-v, C1-2 anterior facets, C2 & 5 apj, T4-5 & T7-12 bsm, L3-5 bsm, L5 apj, S1 bsm; pitting – left a-c & s-c joints, left c-v joint, T7 rib facet; enthesophytes – ischial tuberosities, femur shafts, patellae, right fibula; surface defects – right medial clavicle, left distal tibia	3–4
	5
ante mortem tooth loss; dental caries; osteoarthritis – 1T; Schmorl's node – 1T; ddd – C4 & 6; op – 1C apj, glenoid fossae, distal humeri, acetabulae; pitting – acetabulae, 1C apj; enthesophytes – femur shafts, ischial tuberosity; plastic changes – right humerus substantially more robust than left; mv – absence man. left M3, metopic suture	5
op – S1 bsm, right hip joint, left proximal femur	5
dental caries; op – C1 anterior facet, left acetabulum; enthesophytes – femur shafts, distal fibula shafts, calcanea; exostoses – axis odontoid process; marked *zygomaticus major* attachment; mv – wormian bones	5–5+ Green staining left proximal ulna
	5

Table 3.7 (continued)

Context	*Cut*	*Deposit type*	*Phase*	*Quantification*	*Age/sex*
166098	166097	inh. burial	LBA	*c* 40%	adult >55 yr. male
246141	246139	inh. burial	BA	*c* 20%	infant *c* 10–12 mth
275009	275007	inh. burial	LBA	*c* 90%	adult *c* 24–29 yr. male
302083	302082	R. (ring-ditch)	BA	10 frags u.l.	adult >18 yr. ?male
Zone 23					
290482	290481	inh. burial	MBA	*c* 91%	adult *c* 20–23 yr. female
Zone 24					
198244	198245	inh. burial	LBA	*c* 85%	adult >55 yr. female

KEY: s.a.u.l. – skull, axial skeleton, upper limb, lower limb (skeletal areas represented where not all are present); R. – redeposited; op – osteophytes; ddd – degenerative disc disease; *o.c. dessicans – osteochondritis dessicans*; sbc – solitary bone cyst; mv – morphological variation; bsm – body surface margins; C/T/L/S – cervical/thoracic/lumbar/sacral vertebrae, MtC/MtT – metacarpal/tarsal; MtC/T-P – metacarpal/tarsal – phalangeal joint; IP – interphalangeal joint; apj – articular processes (vertebrae); tp – transverse process (vertebra); c-v – costo–vertebral; a-c – acromio-clavicular; s-c – sterno-clavicular; p-d proximal-distal; SFB – sunken-featured building

Table 3.8 Later prehistoric cremated bone

Context	*Cut*	*Deposit type*	*Phase*	*Bone weight*	*Age/sex*	*Pathology*	*Pyre goods/grave goods/inclusions*
Zone 4							
220140	220139	?R.	LBA	0.9g	subadult/adult >13 yr.		
220142	220141	?rpd	LBA	18g	adult >18 yr.		burnt flint
252210	252209	rpd	LBA	11.3g	juvenile/subadult *c* 5–18 yr.		
252212	252211	rpd	LBA	11.4g	subadult/adult >13 yr.		
252214	252213	rpd	LBA	3.8g	subadult/adult >13 yr.		
252216	252215	un. burial + rpd	LBA	425.3g	adult *c* 30–45 yr. ?female		0.8g u/b sheep tooth
252218	252217	rpd	LBA	1g	>infant (>5 yr.)		
252220	252219	?rpd	LBA	0.7g	infant *c* 0.5–5 yr.		
252222	242221	crd	LBA	1.2g	1) infant *c* 0.05–5yr. 2) subadult/adult >13 yr.		
252224	252223	?un. burial + rpd/ ?rpd	M/LBA	11.6g	infant *c* 1.5–4 yr. + intrusive fragment (s/a)		
252226	252225	rpd	LBA	<0.1g	>infant (>5 yr.)		
252228	252227	?rpd	LBA	17.8g	adult *c* 25–45 yr.		
Zone 6							
247151[s]	170073	urned burial + rpd **	MBA	30.5g	neonate 4–5 mth.		
Zone 7							
179103	179102	un. burial + rpd	M/LBA	166.1g	adult *c* 20–35 yr. ??female		
Zone 11							
153020[s] inc. 153018	153017	urned burial + rpd*	MBA	156.7g	juvenile *c* 4–7 yr.		
Zone 12							
126002	126001	un. burial + rpd	LBA	359g	adult >30 yr. + ?intrusive infant	periosteal new bone – fibula shaft; enthesophytes – femur & fibula shafts	

Pathology	*Comment*
ante mortem tooth loss; extensive tooth wear; calculus; periodontal disease; DISH –3L; osteoarthritis – C1–2 & C6; ddd – C3–5 & 6, 1L; op – 5L bsm, right glenoid, right proximal ulna, left hip joint, right acetabulum; pitting – right acetabulum; enthesophytes – ischial tuberosities, femoral proximal notches; mv – cusp variation	5–5+
	4
dental caries; surface defects – medial clavicles; mv – gap teeth & rotation	4–5, machine disturbance 5++
dental caries; calculus; ?uneven tooth wear ?occupational/grinding; mv – enamel pearls, cusp variations, wormian bones	4–5, ?machine disturbance
ante mortem tooth loss; ?sharp weapon trauma – ?T1; lytic lesions – L5/S1; periosteal new bone – L5-S1; soft tissue trauma/exostoses – right ulna; ddd – C4 & 6-7, T8 & 10-11; Schmorl's node – T12 – L2; op – right glenoid, right acetabulum, left rib facet, T6 & L3-5 bsm; pitting – right s-c, acetabulae, 4 right & 5 left rib facets, L5 apj; enthesophytes – patella, calcanea; mv – absence man. left M3, ossicle at lambda	4–5

Table 3.8 (continued)

Context	*Cut*	*Deposit type*	*Phase*	*Bone weight*	*Age/sex*	*Pathology*	*Pyre goods/grave goods/inclusions*
146013–15	146016	?un. burial + rpd	LBA	81.5g	adult >18 yr.		
214043	214042	?un. burial + rpd	LBA	160.7g	adult >18 yr.	enthesophytes – femur shaft	
219032	219031	crd (inc. rpd)	LBA	0.3g	neonate/infant *c* 0–2 yr.		
Zone 13							
125123	125122	R. (ditch)	?EIA	1g	>infant (>5 yr.)		
130129	208022	crd (inc. rpd)	?IA	2g	infant *c* 1–2 yr.		glass fragment ?intrusive
159125	159118	?un. burial + rpd	E/MIA	7.2g	infant *c* 1.5–4 yr.		fragments u/b neonate/infant bone
159126–8/ 30–31	159118	rpd	E/MIA	7.1g	= 159125		
186134	186135	un. burial + rpd	?BA	4.4g	foetal *c* 25–35 weeks *in utero*		
200065	200062	R. (inh. grave)	E/MIA	0.8g	subadult/adult >13 yr.		
292016	292015	?R.	BA	2.9g	subadult/adult >13 yr.		
296001	296004	R.	IA	3.7g	subadult/adult >13 yr.		
Zone 14							
166052	166051	un. burial + rpd	MBA	370.2g	adult *c* 18–30 yr.	?calcified lymph node	
220025[$]	220024	urned burial*	LBA	13.9g	infant *c* 3–4 yr.	periosteal new bone –?humerus shaft	
Zone 26							
213002/ ?3[$]	213001 ?=222001	placed deposit	MBA	-			
222002	222001	placed deposit	MBA	-			

KEY: $ – lab. excavation by osteoarchaeogist; * – largely undisturbed deposit; ** – undisturbed deposit; un. burial – unurned burial; rpd – redeposited pyre debris; crd – cremation-related deposit; R. – redeposited; op – osteophytes; ddd – degenerative disc disease; mv – morphological variations; C/T/L/S – cervical/thoracic/lumbar/sacral vertebrae; bsm – body surface margins; ap – articular process; u/b – unburnt

Table 4.6 Unburnt Roman human bone

Context	*Cut*	*Deposit*	*Phase*	*Quantification*	*Age/sex*	*Pathology*
Zone 6						
123232	123231	R. (ditch)	R	>1% s.	adult *c* 18–25 yr.	
125246	125243	R. (pit)	E–MR	1 frag. l.	infant *c* 0.5–1.5 yr.	periosteal new bone – left tibia; ?bowed left tibia
126236	125243	R. (pit)	E–MR	*c* 1% s.	adult >18 yr.	mv – occipital sutures
126239a	126238	coffined burial	M–LR	*c* 60%	adult *c* 20–30 yr. female	calculus; dental caries; hypoplasia; ?fracture – left 2nd MtT; osteoarthritis – right knee; cortical defect – left calcaneum & 1st MtT, r. talus & right 1st proximal phalanx; mv – occasional facets (tarsals)
126239b	126238	?R. (grave)	M–LR	teeth & scraps s.	adult >45 yr. ??female	dental caries; hypoplasia; mv – bipartite canine
130012	-	R. (ON 666)	R	1 bone l.	adult *c* 18–30 yr.	
130229 a–c	130228	R. (SFB)	E–MR	a) 1 bone u. b) 1 bone u. c) *c* 1% s.	a) neonate *c* 34–38 wk b) neonate *c* 38–40 wk c) = a or b	c) ?endocranial new bone
132157	132156	inh. burial	M–LR	*c* 50%	adult *c* 40–45 yr. male	*ante mortem* tooth loss; calculus; dental caries; hypoplasia; malocclusion; periodontal disease; crowding; hyper-eruption; fracture – right rib, ?right clavicle & proximal tibia; destructive lesion – right 2nd MtC; ankylosis – right 2nd proximal phalanx & sesamoids; ddd – 1C, T8 & 10, L2, L5–S1; Schmorl's – T7 & 11, L2; osteoarthritis – 2T, L4, right hip; op – 1C apj, T8-9, T11, L2-5 apj, T6-7, 3 c-v, T7 & 9, L3-4 (bsm), ribs, right glenoid & distal radius, 1st MtC-Ps, 3 left proximal IPs, right knee; pitting – T6 apj, ribs; enthesophytes – right scapula & ulna, femora, tibiae, left patella & calcaneum; cortical defect – radii, ulnae; ossified rib cartilage
136101	136099	R. burial (in ditch)	R	*c* 3% s.	adult >35 yr. male	op – right occipital condyle; hyper vascularity – occipito-parietal; thickened skull (cortical); mv – wormian bones
136192	136191	?coffined burial	ER? Prob LR	*c* 2% s.u.l.	adult >35 yr. ??male	op – right proximal femur
139339	139340	R. (ditch terminus)	MR	1 bone u.	neonate/infant *c* 6 mth	
145347	145348	R. (ditch)	E–MR	*c* 8% l.	adult >18 yr.	
153096	153095	inh. burial	ER	*c* 35%	adult *c* 45–55 yr. ?male	calculus; hypoplasia; osteoarthritis – T6–7, T11; op – T6-7 apj, T11 tp & c-v, 2T tp, 2 right & 1 left rib, left knee; pitting – T6-7 apj, T11 tp & c-v, right rib
176030	176031	inh. burial	MR	*c* 70%	juvenile *c* 9–11 yr. ??male	calculus; hypoplasia; cortical defect – clavicles, left humerus; mv – wormian bones, atlas bridging
176107	176106	inh. burial	LIA/ER	*c* 80%	juvenile *c* 5–6 yr. ?male	dental caries (deciduous); cortical defects – humeri, ?femoral heads; mv – wormian bones
176107	176106	R. (grave)	LIA/ER	1 frag. a.	neonate	
178221	178220	R. (pit)	MR	1 bone l.	neonate *c* birth	
207051	207049	inh. burial	MR	*c* 25%	adult *c* 18–30 yr. ?male	dental caries; hypoplasia; cortical defect – right 1st proximal phalanx
222126	222121	R. (pit)	ER	1 bone l.	neonate c birth	
246150	246148	inh. burial	LR	*c* 60%	adult *c* 18–25 yr. male	calculus; hypoplasia; periodontal disease; enthesophytes – clavicles; mv – metopic suture, shovelled I2s
247091	?	R.	ER	1 frag l.	adult >18 yr.	
248191	248190	R. (ditch)	E/MR	*c* 4% s.	juvenile *c* 10–12 yr.	calculus
254021	254020	coffined burial	LR	*c* 40%	subadult/adult *c* 16–20 yr. ??male	calculus; dental caries; hypoplasia; mv – wormian bones
254025	232027	R. (ditch)	ER	1 frag l.	adult >18 yr. ??male	
256046	263043	R. (pit)	ER	1 frag u.	adult >18 yr. ?male	

Table 4.6 (continued)

Context	*Cut*	*Deposit*	*Phase*	*Quantification*	*Age/sex*	*Pathology*
260012	260011	R. (ditch)	ER	1 frag l.	adult >18 yr.	
260027	260017	coffined burial	ER	*c* 1% teeth and frags.	infant *c* 6–9 months	hypoplasia
278168	278165	R. (ditch)	ER	1 frag s.	adult >18 yr.	
278171	278172	inh. burial	MR?	*c* 85%	neonate ??female	mv – bifid right 2nd rib
289027	289030	R. (ditch)	E–MR	*c* 1% teeth and frags s.	adult >45 yr. ?male	calculus; hyper-eruption; impaction; periodontal disease; mv – mandibular tori
289027b	289030	R. (ditch)	E–MR	1 frag l.	neonate *c* birth	
289046	289042	R. (SFB)	M–LR	2 frags s.	neonate/infant *c* 6 mth–2 yr.	
295038	295035	R. (ditch)	ER	1 bone a.	adult >25 yr. ?male	op – C7 apj
297081	297082	R. (ditch)	ER	1 frag s.	juvenile/subadult *c* 5–17 yr.	
297090 & 297091	297092	inh. burial	R	*c* 25%	neonate *c* birth	endocranial new bone
297119	297120	R. (ditch)	ER	*c* 3% s.	adult >18 yr.	mv – wormian bones
321015	321017	R. (ditch)	E–MR	1 bone u.	neonate *c* birth	
Zone 7						
150082	150083	inh. burial	E–MR	*c* 90%	adult >55 yr. male	*ante mortem* tooth loss; apical voids; calculus; dental caries; hypoplasia; hypercementosis; impaction; periodontal disease; fractures – fibulae; ddd – C2-7, T3-4, 2T, L3-5; osteoarthritis – C2-5, T2, T11, L4-S1, elbows, 3 right carpals & 1st C-MtC, left knee, ?1st MtT-Ps; op – C2, T1, T11, 3T, L1-3 apj, T5, S1 (bsm), T4-7, T10 c-v, T9, 4T tp, right glenoid, elbows, left distal ulna, 1st Ips (hands), 2 left distal Ips, hips, knees, left ankle, tali, calcanea, 1st proximal Ips (feet), 5 right & 8 left ribs; pitting – left s-c, hips pelvis, knees, 1st MtT-Ps; enthesophytes – humeri, innominates; cortical defect – 1st MtT-Ps; mv – wormian bones, shovelled I2, mandi bular tori, tarsal variation (flat–feet), fused 5th phalanges (feet)
216069	216068	R. (ditch)	ER	1 bone l.	adult >25 yr. male	
248102	248103	inh. burial	E–MR	*c* 75%	adult *c* 35–45 yr. female	*cribra orbitalia*; fracture – right tibia; periosteal new bone – right fibula; ddd – C5, T3–4, L4; Schmorl's – T8-10; osteo–arthritis – T11; op – C7, T11 apj, C3-4, 6, T2, T8-10 bsm, T1, T10 c-v, T2, 3T tp, glenoids, left elbow, proximal IP (hand), right knee, 6 left & 5 right ribs; pitting – T12 c-v, s-c, 6 left ribs; enthesophytes – left calcaneum; mv – wormian bones, extreme femora & tibiae shaft flattening, occasional facets – tarsals
267090a	267091	coffined burial	E–MR	*c* 50%	adult >40 yr. male	calculus; dental caries; hypoplasia; osteo-phytes – right hip; enthesophytes – right femur; exostoses – right femur; mv – wormian bones, extreme tibiae shaft flattening
267090b	267091	R. (grave)	E–MR	*c* 5% s.u.	adult >25 yr.	
297016	297017	inh. burial	E–MR	c 40% a.u.l.	adult *c* 30–40 yr. male	periosteal new bone – tibiae, L5-S1; destructive lesion – L5-S1; ddd – L5-S1; op – left rib, right 1st C-MtC, hips; pitting – hips; cortical defect – left 1st MtT-P; mv – occasional facets – tarsals
297021	297022	inh. burial	E–MR	*c* 55%	adult *c* 30–35 yr. female	*ante mortem* tooth loss; apical voids; calculus; dental caries; hypoplasia; hyper-cementosis; periodontal disease; second ary sinusitis (bi-); periosteal new bone – left maxilla; ddd – C4-5, L5-6; op – C1, L5 apj; exostoses – left rib; mv – metopic suture, wormian bones, atlas bridging, L6

Table 4.6 (continued)

Context	*Cut*	*Deposit*	*Phase*	*Quantification*	*Age/sex*	*Pathology*
Zone 10/10a						
42021	42043	R. (ditch)	R	*c* 3% s.	adult >18 yr. female	
176335	176334	coffined burial (decapitated)	E–MR	*c* 15%	adult *c* 30–40 yr. ??female	*ante mortem* tooth loss; apical void; calculus; dental caries; hyper cementosis; mv – shovelled Is, mandibular tori
179269	179267	coffined burial	M–LR	*c* 10%	juvenile *c* 4–5 yr.	dental caries (deciduous); hypoplasia
182342	182340	inh. burial	M–LR	*c* 85%	adult *c* 35–45 yr. male	*ante mortem* tooth loss; apical voids; calculus; dental caries; hypoplasia; periodontal disease; op – C1, C4 apj, T6, 11 tp, left sacro-iliac, left rib; pitting – left a-c; enthesophytes – ribs, innominates; cortical defect – costo-claviculars, 1st proximal phalanx (right foot); mv – wormian bones, atlas bridging
239262 a & b	239260	R./placed (grave)	R	a) *c* 12% b) 3 frags. S.	2 x neonates *c* birth–2 wks	
239264	239260	R./placed (grave)	R	*c* 60%	adult *c* 45–50 yr female	*ante mortem* tooth loss; apical voids; calculus; dental caries; hypoplasia, periodontal disease, fracture – 1T, left rib; infection – maxilla; op – T1 tp, 2T, 1L apj, left acetabulum; pitting – 2T, 1L apj, left s-c; enthesophytes – pubis (?parturition), left humerus; cortical defect – left costoclavicular; mv – wormian bones, mylohyoid bridging
239268	239266	coffined burial	R	*c* 80%	adult *c* 45–55 yr. female	*ante mortem* tooth loss; apical void; dental caries; hypoplasia; secondary sinusitis; fracture – left fibula; ddd – C5-6, S1; osteoarthritis – T1, T4-6, right temporo-mandibular joint, left 1st rib; op – C1-2, C3-4 bsm, C4-5, S1 apj, T1-6 tp, 2 right ribs, right hip, glenoids, tarsals; pitting – T2-6, S1 apj, 2 right ribs; enthesophytes – calcanea; mv – asymmetric occipital condyles, atlas bridging, mandibular tori
239281	239278	coffined burial	LR	*c* 99%	adult *c* 45–55 yr. male	*ante mortem* tooth loss; apical voids; calculus; dental caries; hypoplasia; periodontal disease; *cribra orbitalia*; DISH – T3-L3; infection – maxilla (secondary sinusitis), left temporo-mandibular joint, 1T, 1L; periosteal new bone – right scapula (?bursitis); weapon trauma – left frontal; fracture – 2 left ribs, manubrium; ankylosis – C2-3, T8-10; Schmorl's – T6-7, 11; ddd – C4-7, T1-2, T4, T7, T11-12, S1; osteoarthritis – left temporo-mandibular, C1, C2, C3-7, L4-S1, right a-c, right 1st MtC-P; op – right occipital condyle, C1 anterior facet, 4C apj, 2T apj, L1-S1 apj, T1 & T12 c-v, C3 bsm, 6T bsm, L1-5 bsm, 2 right ribs, right s-c, shoulders, elbows, wrists, hands, hips, left knee; pitting – right temporo-mandibular joint, 2T apj, T1 & 11 (c-v), s-cs, wrists; enthesophytes – clavicular notches, arms, legs (incl. anterior talofibular ligament, cf. 247314), 1st MtTs; ossified cartilage – ?nasal & vertebral discs; mv – metopic suture, wormian bones, occasional tarsal facets

Table 4.6 (continued)

Context	*Cut*	*Deposit*	*Phase*	*Quantification*	*Age/sex*	*Pathology*
247314 (incl. 247316)	247315	R.(cremation grave)	ER	<2% l.	adult >20 yr. ?male	enthesophytes – left fibula
248220	248221	inh. burial (prone)	E–MR	*c* 70%	adult *c* 21–25 yr. ?female	calculus; hypoplasia; *cribra orbitalia*; Schmorl's – T5, T8-L2; entheso-phytes – proximal humeri; cortical defect – costo-claviculars, proximal humeri; mv – wormian bones, Vastus notches, occasional tarsal facet
258344	258342	inh. burial	R	*c* 99%	adult *c* 40–50 yr. male	*ante mortem* tooth loss; apical voids; calculus; dental caries; hypoplasia; periodontal disease; infection – maxilla (inc. secondary sinusitis); periosteal new bone – L5; destructive lesion – right palatine, C6; cyst/fibroma – right orbit, endocranial left temporal, carpals; sharp weapon trauma – C4; fracture – C7, left rib; ddd – 3C, T8, L1-S1; osteoarthritis – C1-2, 4C, T1 & T3-5, right acetabulum; op – T9-10 bsm, T4-6 & L4-5 apj, T5 & T8-10 tp, T10-12 c-v, tarsals, 2 left & 2 right ribs, s-cs, glenoids, proximal and distal radii, proximal IPs (hands), hips, right knee; pitting – temporo-mandibular joints, C7 & 2T apj, 4T c-v, right rib, a-cs, left distal ulna; enthesophytes – femora, calcanea; ossified cartilage (thyroid); cortical defects – scapulae, left costo-clavicular, right proximal humerus; mv – wormian bones, mylohyoid bridge, mandibular tori, occasional facets – tarsals
Zone 13						
150058	150050	?R. (quarry pit)	ER	*c* 2% s.a.u.	infant/juvenile *c* 4–6 yr.	
156151	156146	inh. burial/ ?R (pit)	ER	*c* 35%	neonate *c* birth–1 wk.	
156161	156146	R. (pit)	ER	1 bone l.	neonate *c* birth–1 wk.	?=156221
156169	156166	R. (pit)	ER	1 frag s.	adult >25 yr.	
156221	156146	R. (pit)	ER	1 bone l.	neonate *c* birth	?= 156161
174208	174207	R. (quarry pit)	ER	1 frag s.	adult >18 yr.	mv – metopic suture
191127	191125	R. (SFB)	ER	1 bone l.	neonate *c* birth	
Zone 14						
203041	203040	R. (ditch)	R	1 frag s.	infant *c* 6 mth–4 yr.	
Zone 19						
126101	126100	coffined burial	R	*c* 38% s.u.l.	adult *c* 35–45 yr. ??female	calculus; dental caries; hypoplasia; enthesophytes – left radius, right femur, patellae, calcanea; cortical defect – 1st proximal phalanges (feet); mv – occasional facets – tarsals
126205	126204	inh. burial	?AS/R	*c* 85%	adult >45 yr. male	*ante mortem* tooth loss; apical void; calculus; dental caries; hypoplasia; hyper-eruption; periodontal disease; *cribra orbitalia*; osteoporosis – Ls; *hallux valgus* (left); fracture – ?left mandible, L1, left 1st MtC, right 4th–5th MtC & talus; spondylolysis; ?cyst – incisive canal; Schmorl's – T10-12, L2-3; ddd – C6-7, L1-4; plastic change – L3-5; ankylosis – L2-3 apj; osteoarthritis – 3Tc-v; left wrist & 1st MtC, 1st MtT-Ps;

Table 4.6 (continued)

Context	*Cut*	*Deposit*	*Phase*	*Quantification*	*Age/sex*	*Pathology*
						op – C2 anterior facet, 3C/2T/5L/S1 apj, T10 & L5-S1 bsm, 3 left & 1 right ribs, s-c, shoulders, wrists, 2 right C-MtC, right hip & ankle, knees; pitting – 1C/2T/1L apj, T5 & 10 c-v, right temporo–mandibular joint, 3 left ribs, s-c, right a-c & hip, knees; enthesophytes – innominates, clavicles
126224	126223	inh. burial	?AS/R	*c* 65%	adult >45 yr. male	*ante mortem* tooth loss; apical void; calculus; dental caries; periodontal disease; *cribra orbitalia*; osteoporosis; DISH; hyperporosity – maxilla; thickening – skull vault; Schmorl's – T3, T5-7 & T10-12, L1-3; ddd – 5C, 7T, 2L1, S1; ankylosis – L4-5 bsm, sacro-iliac; osteoarthritis – C1-2 anterior facets, C4-5, T2-5, right wrist, knee & hip; op – C7/T8/3L apj, T9 bsm, 4T c-v, 3 left & 5 right ribs, shoulders, elbows, left wrist & 5th MtT-P, hips, right knee; pitting – 5T c-v, left a-c; enthesophytes – left calcaneum; cortical defect – right glenoid; mv – congenital absence M3, L6, bunionette
126332	126331	inh. burial	R	*c* 20%	infant *c* 1–2 yr.	hypoplasia
150099	150097	coffined burial	R	*c* 45%	infant *c* 3.5–4.5 yr.	dental caries (deciduous), hypoplasia; *cribra orbitalia*; endocranial new bone; hyperporosity – palate; mv – wormian bones;
151050	151051	inh. burial	M–LR	*c* 25%	adult *c* 35–45 yr. female	calculus; osteoarthritis – T8, left rib; op – 2T & L5 apj, T7 bsm, T2 & T9 tp, 8 left & 12 right ribs; pitting – 5T apj, T11-12 c-v; exostoses – proximal phalanx (left hand); mv – wormian bone
171193	171194	inh burial (flexed)	M–LR	*c* 75%	subadult *c* 13–15 yr. ?female	calculus; *cribra orbitalia*; destructive lesion – L3 body; impaction; mv – retained m2s, wormian bones, L6
176343	176342	inh. burial	LR	*c* 80%	adult *c* 30–35 yr. female	*ante mortem* tooth loss; calculus; dental caries; hypoplasia; impaction; periodontal disease; crowding; rotation; *cribra orbitalia*; fractures – ulnae (non-union); Schmorl's – T8, 11, L2-3; ddd – T9, L1, 3; op – T1-2, T4, T7, T10 (apj), T5, 8 (bsm), T4, T9 (tp); pitting – T2-7 (apj), left s-c; mv – wormian bones, pre-condylar tubercles, plural mental foramen, sacralised L5, septal apertures
176346	176345	coffined burial	R	*c* 12% u.l.	infant *c* 2–3 yr.	
205120	205118	inh. burial	M–LR	*c* 80%	adult *c* 40–50 yr. male	*ante mortem* tooth loss; apical void; calculus; dental caries; hypoplasia; periodontal disease; trauma – ?weapon injury (left frontal); infection – maxilla; hyperporosity – palate; ddd – 4T, L2-5; osteoarthritis – left wrist; op – 4 right ribs, right glenoid, left knee, left 1st MtT-P & 3 proximal IPs; pitting – 5T tp, L1 apj, right s-c; enthesophytes – patellae, calcanea; cortical defect – 1st proximal phalanx (left foot); mv – wormian bone, supernumerary tooth (unerupted) sacralised L5, occasional tarsal facets

Table 4.6 (continued)

Context	*Cut*	*Deposit*	*Phase*	*Quantification*	*Age/sex*	*Pathology*
216011	216010	inh. burial (disturbed/ revisited)	M–LR	*c* 75%	adult *c* 35–40 yr. male	calculus; dental caries; periodontal disease; periosteal new bone – ?r. fibula; Schmorl's – T4-6 & T8-12, L1 & 4; ddd – 1C, 4T, 3L; ankylosis – L1-2; op – 3Tapj, 2T & 2L bsm, T12 c-v, 8 r. ribs, a-cs; pitting – T9 c-v, right s-c, left acetabulum; mv – occipital bunning, wormian bones, congenital absence M3s
220056	220054	coffined burial	ER	*c* 90%	adult *c* 40–50 yr. female	*ante mortem* tooth loss; apical voids; calculus, dental caries; hypereruption; periodontal disease; sbc – right navicular; fracture – left rib; destructive lesion – skull vault; degenerative compression – C4, Ls, S1; Schmorl's – T7-8, L3; ddd – C4-5, T1, L2-S1; osteoarthritis – C1-2 anterior facets, C3-4, T2-6, L5, knees; op – C5, T6-8, L1-5 (bsm), T6 & 8 c-v, 3T tp, 9 right & 4 left ribs, clavicles, glenoids, hips; pitting – T7 apj, T1 c-v, 9 right & 4 left ribs, s-cs, hips, right 1st MtT-P; rotator cuff erosion – right humerus; plastic change – right knee (?bursitis); mv – wormian bones, diastema (maxillary I1s), congenital absence M3s, mandibular tori, septal apertures, occasional facet right navicular
220062	220060	inh. burial	R	*c* 10% s.a.u.	neonate *c* 3 months	periosteal new bone – right humerus shaft
220113	220112	coffined burial	ER	*c* 70%	adult *c* 40–50 yr. ?female	*ante mortem* tooth loss; calculus; dental caries; hypercementosis; fracture – T & L1; Schmorl's – 1T; ddd – C3-7, 2L; osteoarthritis – T1, S1; op – C1-2, 4C/1T/1L apj, 4C/9T/3L bsm, 2T c-v, 8 left ribs, left distal ulna, left scaphoid, right 1st MtC-P & 2 distal IPs, knees; pitting – right temporo-mandibular, 2T c-v, 8 left ribs, acetabulae, s-cs; entheso phytes – costo-claviculars, left patella; plastic changes – bowed radii & ulnae (?rickets); mv – double occipital facets
220137	220136	inh. burial	?AS/R	*c* 60%	adult *c* 40–50 yr. ?female	*ante mortem* tooth loss; apical void; calculus; dental caries; hypoplasia; periodontal disease; infection – maxilla; Schmorl's – T7-9, L1-5; ddd – L1-5; op – T9/5L/S1 apj, 1C & 6T bsm, 4T c-v, T1 tp, 7 right ribs, sacro-iliacs, right glenoid, left elbow; pitting – T4-5 & L2 apj, T5 tp, temporo-mandibular joints, sacro-iliacs, right a-c, left wrist; mv – shovelled Is
228048	228050	inh. burial	M–LR	*c* 40%	adult *c* 30–35 yr. female	*ante mortem* tooth loss; apical void; calculus; dental caries; hypoplasia; periodontal disease; periosteal new bone – mandible; Schmorl's – T11; osteoarthritis – left rib; op – T12 & L1 apj
248106	248104	coffined burial	ER	*c* 2% s.u.l.	juvenile c 9–10 yr.	calculus (deciduous)
248109	248107	inh. burial	R	*c* 75%	juvenile *c* 10–11 yr. ??female	impaction; *spina bifida occulta*; endocranial new bone; ?stunted growth
248268	248266	inh. burial	R	*c* 10% s.a.	adult *c* 35–50 yr. ?female	*ante mortem* tooth loss; apical void;

Table 4.6 (continued)

Context	*Cut*	*Deposit*	*Phase*	*Quantification*	*Age/sex*	*Pathology*
						dental caries; periodontal disease; infection – maxilla; mv – ?retained deciduous tooth
257015	257016	inh. burial	M–LR	*c* 60%	adult *c* 30–40 yr. female	calculus; dental caries; hypoplasia; crowding; rotation; *cribra orbitalia*; ankylosis – T8-9, T11-12; Schmorl's – T7-8, T10-L5; ddd – C5, T9-11, L1-5; op – C1-2, 3L apj, 4T & 4L bsm, T11-12 c-v, 4T tp, 12 right & 11l. ribs; pitting – T1 c-v, 12 right & 11 left ribs; fused hyoid; mv – wormian bones, congenital absence M3s, S6
257018a	257019	inh. burial	M–LR	*c* 70%	adult *c* 35–45 yr. male	calculus; periodontal disease; periosteal new bone – tibiae; destructive lesion – left 1st MtT; osteoporosis; ankylosis – sacro-iliac, L4-S1; plastic change (cyst?) – C2 foramen; Schmorl's – T12; ddd – T12, 1T; osteoarthritis – C3-4; op – C1, L1-S1 apj, 2C/2T/2L bsm, T12 c-v, T1 tp, right upper limb, right hip, right knee, 1 right & 3 left proximal IPs (feet); pitting – L1-3 apj; mv – septal apertures
257018b	257019	R.	M–LR	1 bone l.	adult *c* 18–35 yr. ?female	
262043	262044	inh. burial	M–LR	*c* 50%	adult *c* 30–40 yr. female	calculus; hypercementosis; fracture – T5; Schmorl's – T6-7, T9, 2L; op – L3 apj, L bsm, T11 c-v; cortical defect – C apj; mv – wormian bones, septal aperture, occasional tarsal facets
262061	262062 (ditch)	inh. burial	R	*c* 65%	adult *c* 35–45 yr. male	calculus; dental caries; hypoplasia; periodontal disease; weapon trauma – skull; spondylolysis; Schmorl's – T6, T8-12, L1-4; ddd – C5, L4; osteoarthritis – T6, T12, L4; op – C1-2, T4-7 & L1-4 apj, T9 bsm, T7 c-v, 6T tp, 3 left & 9 right ribs, 2 proximal IPs (right hand); pitting – 3T & L4 apj, T11 c-v, s-cs, right shoulder; enthesophytes – costo-manubrial, left forearm; cortical defects – costo-claviculars, humeri shafts; mv – double root C, sternal aperture
278058	278060	inh. burial	M–LR	*c* 90%	adult *c* 20–23 yr. female	calculus; dental caries; hypoplasia; periodontal disease; *cribra orbitalia*; cortical defects – right costo-clavicular, 1st proximal phalanges (feet); mv – wormian bones, congenital absence maxillary I2s, septal apertures

Table 4.6 (continued)

Context	*Cut*	*Deposit*	*Phase*	*Quantification*	*Age/sex*	*Pathology*
Zone 20						
126067	126066	coffined burial	R	*c* 20%	adult >45 yr. Male	calculus; hyper-eruption; periodontal disease; ddd – C5-6; osteo arthritis – C3-4; op – C2, C5 & C7 bsm, 11T apj
126086	126084	coffined burial	MR	*c* 40%	adult *c* 35–45 yr. male	
144127	144128	R. (pit)	R	*c* 2% a.l.	adult >18 yr.	
182242	182241	inh. burial	MR	*c* 2% s.	infant *c* 2–3 yr.	
198301	198300	coffined burial	MR	*c* 15% u.l.	subadult *c* 12–14 yr.	
205137	205135	inh. burial	M–LR	*c* 50%	neonate *c* birth–2 wk.	
205149	205147	inh. burial (pit)	M–LR	*c* 25%	neonate *c* birth–2 wk.	hypoplasia
216095	216094	?coffined burial	M–LR	*c* 35% s.u.l.	adult *c* 20–25 yr. ?male	calculus; hypoplasia; plastic change – femora shafts; mv – shovelled I2s
249059a	249049	inh. burial (SFB)	MR	*c* 15% s.a.u.	neonate *c* birth–2 wk.	hypoplasia
249059b	249049	inh. burial (SFB)	MR	*c* 25%	neonate *c* 38–40 wk.	
250057	250055	inh. burial	R	*c* 55%	adult *c* 25–35 yr. female	calculus; periodontal disease; variant M3
252103	252101	inh. burial	M–LR	*c* 65%	neonate *c* birth–2 wk. ??female	
267001	267003	coffined burial (revisited)	MR	*c* 65%	adult *c* 40–50 yr. male	*ante mortem* tooth loss; apical void; dental caries; hyper-eruption; periodontal disease; *cribra orbitalia*; secondary sinusitis; destructive lesion – maxilla; op – acetabulae; enthesophytes – innominates, proximal femora, distal left tibia; mv – mandibular tori
271051	271052	R. (SFB 249081)	MR	1 bone a.	neonate *c* 0–6 mth.	
271058	271052	R.?/?inh. burial (SFB 249081)	MR	*c* 30%	neonate *c* 38–40 wks	
273126	273124	R. (ring-ditch)	MR	1 frag. shaft l.	adult >20 yr. ??male	?healed trauma – left femur

KEY: s.a.u.l. – skull, axial skeleton, upper limb, lower limb (skeletal areas represented where not all are present); R. – redeposited; phase: R – Roman; ER – early Roman; MR – middle Roman; LR – late Roman; op – osteophytes; ddd – degenerative disc disease; *o.c. dessicans* – *osteochondritis dessicans*; sbc – solitary bone cyst; mv – morphological variation; bsm – body surface margins; C/T/L/S – cervical/thoracic/lumbar/sacral vertebrae; MtC/MtT – metacarpal/tarsal; MtC/T-P – metacarpal/tarsal – phalangeal joint; IP – interphalangeal joint; apj – articular processes (vertebrae); tp – transverse process (vertebra); c-v – costo-vertebral; a-c – acromio-clavicular; s-c – sterno-clavicular; p-d proximal-distal; SFB – sunken-featured building

Table 4.7 Summary of results from analysis of cremated bone

Context	*Cut*	*Deposit type*	*Phase*	*Bone weight*	*Age/sex*
Zone 6					
193105§	278177	?cenotaph	LIA/ER	-	
Zone 7					
179132	-	burial	MR	106.8g	adult >45 yr. ??female
267090	267091	R. (inh. grave)	MR	1.8g	subadult/adult >13 yr.
271010	271009	un. burial + rpd*	MR	783.7g	1) adult *c* 25–35 yr. ?female 2) foetal *c* 7 mth *in utero*
Zone 10					
42003§	42001	urned burial**	MR	1305.5g	adult *c* 45–55 yr. ?male
42009	42019	rpd	E/MR	8.5g	adult >18 yr. ??male
169009	248221	R. ?burial	?R	19.8g	subadult/adult >15 yr.
176312	176311	urned burial + rpd*	MR	1331.2g	adult *c* 25–35yr. female
247316	247315	?un. burial	ER	243.1g	adult >30 yr. ??female
Zone 11					
147139	147141	un. burial**	LIA/ER	365.1g	adult >35 yr. ??male
171024	171023	?un. burial + rpd/?rpd	?LIA	46.7g	subadult/adult >15 yr. ??female
209121/6 = 147139	147141	grave fill	LIA/ER	44.7g	= 147139
209123§	147141	accessory deposit**	LIA/ER	6.8g	= 147139
Zone 19					
126101	126100	R. =126107 (inh. grave)	R	4.2g	juvenile/subadult *c* 8–14 yr.
126104	126103	= 126108	LIA/ER	1.4g	
126107	126106	urned burial	R	51.5g	juvenile *c* 7–12 yr.
126108	126103	urned burial	LIA/ER	35g	infant *c* 2–3 yr.
126111/12	126110	un. burial*	R	464.8g	adult *c* 30–40 yr. ?female
126196§	126195	urned burial**	LIA/ER	735.6g	adult *c* 35–45yr. ??female
126224–5	126223	R. ?urned burial (in AS inh. grave)	ER	85.1g	adult >45 yr.
126337§	126334	R. = 126342*	ER	1.4g	>infant (>5 yr.)
126339§	126334	accessory vessel*	ER	-	
126341§	126334	accessory vessel*	ER	-	
126342	126334	un. burial**	ER	369g	adult >45 yr. ??female
150101	150100	rpd + part un. burial	ER	58.4g	= 150103
150103	150100	un. burial	ER	87.9g	subadult *c* 14–18 yr. ??male
153061	153060	?un. burial + rpd/?rpd	MR	94.3g	= 153064
153064	153060	?urned burial	MR	56.2g	adult >20 yr.
153069	153068	R. (modern)	R	174g	=153070
153070	153068	un. burial *	R	406.8g	adult >45 yr. ??female
166078	166077	?cenotaph*	MR	26.6g	subadult/adult *c* 15–35 yr.
166083	166082	R.	MR	23.1g	= 166088
166088§	166082	urned burial**	MR	1075.7g	adult *c* 40–55 yr.
166090§	166082	accessory** vessel/?token	MR	5.8g	= 166088
177482	177480	urned burial rpd**	MR	162.7g	adult >45 yr. ?female
220055–6	220054	R.(inh. grave)	ER	2.9g	juvenile/subadult *c* 5–18 yr.
220059 inc. 220058	220057	un. burial* + rpd	R	1237.3g	adult >45yr. ?female

Pathology	*Pyre goods/grave goods/inclusions*
	fuel ash
osteoarthritis – prox. femur; enthesophytes – humerus shaft, finger phalanges shafts, thoracic spinal process	
	5.8g domestic fowl & medium mammal
osteoarthritis – distal ulnae, right lunate, prox. tibia, hip joints, distal humerus, right proximal radius, 2C, 1T, 1L, right scapula; periosteal new bone – fibula shaft; ddd – 4C; op – C1, S1, scapula, distal femur, both distal humeri, tight distal radius, distal finger phalanx; pitting – left proximal radius, left temporo-mandibular, 1C, 3T, 1 costo-vertebral	
	0.1g u/id mammal
periosteal new bone – ventral ilium, humerus shaft, tibia & fibula shafts; pitting – 1T	21.2g small bird & sheep/goat. Fe nail shank
	Fe nail. Scraps u/b human bone
op – 1T bsm	
op – 1T/L bsm	
	Fe staining
	Frag. u/b sheep/goat tooth with copper alloy staining
	1.3g small bird; 6.5g u/b neonatal sheep/goat & pig; Fe nail shanks (3); Green/blue spot staining humerus shaft; Fe staining femur shaft
periosteal new bone – tibia shaft; mv – mandibular tori, wormian bone	u/b sheep/goat (?intrusive)
osteoarthritis – 1C; enthesophytes – femur shaft	
	11.3g u/b immature sheep/goat & frog
	dense fill u/b animal
ante mortem tooth loss; enthesophytes – femur shaft	20.6g u/b immature pig
	3.6g u/b pig; frags. copper alloy sheet;
	11.4g u/b immature pig, some copper alloy staining
	6.9g small bird, pig, sheep/goat & ?dog
	8.3g small bird, pig, sheep/goat & ?dog
	1.3g bird
fracture (healed) – rib; osteoarthritis – costo-vertebral; enthesophytes – iliac crest; pitting – 3T; op – 1T ap	0.7g neonatal pig & small dog; blue/green staining left petrous temporal
	0.8g bird (?domestic fowl); 3 Fe nails
	1.4g u/b animal
ante mortem tooth loss; periodontal disease; op – C1, 3C bsm, scaphoid; ddd – 1 C/T, 3L; Schmorl's node – 1T; enthesophytes – patella; mv – Vastus notch	5.4g domestic fowl & medium mammal
ante mortem tooth loss; exostoses – tibia shaft	0.3g small bird; Fe nail with wood
	?ass. 126107 in adjacent grave
ante mortem tooth loss; dental abscess; osteoarthritis – 1C, 2 right costo-vertebral, 1L, distal ulna; Schmorl's node – 1L; ddd – 1L, S1; pitting – medial clavicle, left scaphoid; op – 3T bsm, 2 L bsm, 2 proximal IP joints (hand); exostoses – humerus shaft; enthesophytes – femur shaft, patella; mv – wormian bones	5g bird & pig; 12.2g u/b pig (grave fill); copper alloy sheet

Table 4.7 (continued)

Context	*Cut*	*Deposit type*	*Phase*	*Bone weight*	*Age/sex*
220063	220064	un. burial	R	249.2g	adult *c* 21–35yr. ?female
220069/70[$]	220068	placed deposit/?cenotaph	ER	0.1g	
220073	220072	crd/?un. burial	R	70g	adult *c* 20–40 yr.
220075	193051	un. burial	LIA/ER	43.2g	adult *c* 30–45 yr.
220104 inc. 220103	220099	urned burial	MR	436g	adult *c* 20–35yr. ?male
220116	220115	?un. burial	MR	78.7g	adult >20 yr.
220118	220117	un. burial	R	231.7g	adult >30 yr. ?female
220120	220119	R. (grave fill)	LIA/ER	25.2g	= 220121
220121	220119	?urned burial	LIA/ER	356.5g	adult *c* 30–45yr. ??female
220130	220129	un. burial	R	271.9g	adult >35 yr. ??male
239108	239107	?rpd/?un. burial + rpd	R	119.8g	adult *c* 30–40 yr.
248263[$] inc. 248261	248260	urned burial	ER	125.8g	adult *c* 18–40yr.
267070	267072	R. (inh. grave)	?R	0.5g	?infant >5 yr.
279098[$]	279096	urned burial*	MR	404.7g	adult >50 yr. ??female
Zone 20					
215191v	215193	urned burial*	MR	1357.7g	1) adult *c* 20–30 yr. female 2) infant *c* 2 yr.
215192[$]	215195	urned burial*	MR	766.3g	adult >45 yr. ??male
215194	215193	(spill)	MR	0.8g	= 215191
215197	215199	urned burial	MR	337.1g	infant/juvenile *c* 5 yr. ??male
228058[$]	228055	placed deposit	MR	-	
252067[$]	252066	urned burial*	R	489.2g	adult >18 yr. ??female
252069[$]	252068 =252066	accessory vessel	R	0.7g	= 252067
Zone 29					
159010	159009	R.	R	66.6g	= 159014
159014	159009	urned burial	ER	202g	adult *c* 30–50 yr. ?female
159023	159009	R. in accessory vessel	ER	0.4g	= 159014
Weatherlees Pond					
179	197	R. (ditch)	LIA/ER	2.1g	probably human

KEY: $ – lab. excavation by osteoarchaeogist; * – largely undisturbed deposit; ** – undisturbed deposit; un. burial – unurned burial; rpd – redeposited pyre debris; crd – cremation-related deposit; R. – redeposited; phase: R – Roman; ER – early Roman; MR – middle Roman; LR – late Roman; op – osteophytes; ddd – degenerative disc disease; mv – morphological variations; C/T/L/S – cervical/thoracic/lumbar/sacral vertebrae; bsm – body surface margins; ap – articular process; u/b – unburnt

Pathology	*Pyre goods/grave goods/inclusions*
	0.2g animal
	1.4g u/b u/id animal (?intrusive) 0.4g medium mammal
enthesophytes – femur shaft	13.1g domestic fowl & sheep/goat
	0.2g u/b animal bone (?intrusive) 1.5g u/id animal 0.2g deer antler
ante mortem tooth loss periodontal disease; osteoarthritis – 1T; op – C2, 1T bsm op – mandibular condyle	1.9g animal 2.9g unburnt pig 2g domestic fowl & immature pig 0.2g small bird & immature pig
ante mortem tooth loss; apical cysts/abscess; ?periosteal new bone; op – C2, 1C bsm	
?osteoma – occipital	
ddd – 1C; op – distal humerus, C1 anterior facet, 2T bsm	
	from ONs 4029 & 4930 0.6g domestic fowl
	grave goods placed over bone – 3 bracelets + ring (Fe stains to vault & ulna shaft)
	3.6g ?roe deer u/b sheep/goat

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